

Skyways

FOR BUSINESS

OFFICIAL PUBLICATION NATIONAL BUSINESS AIRCRAFT ASSOCIATION



UESADA, D

Chief

TABLE:

CURRENT PHYSICALS

WANT TO PILOTS'

AND SAFETY?

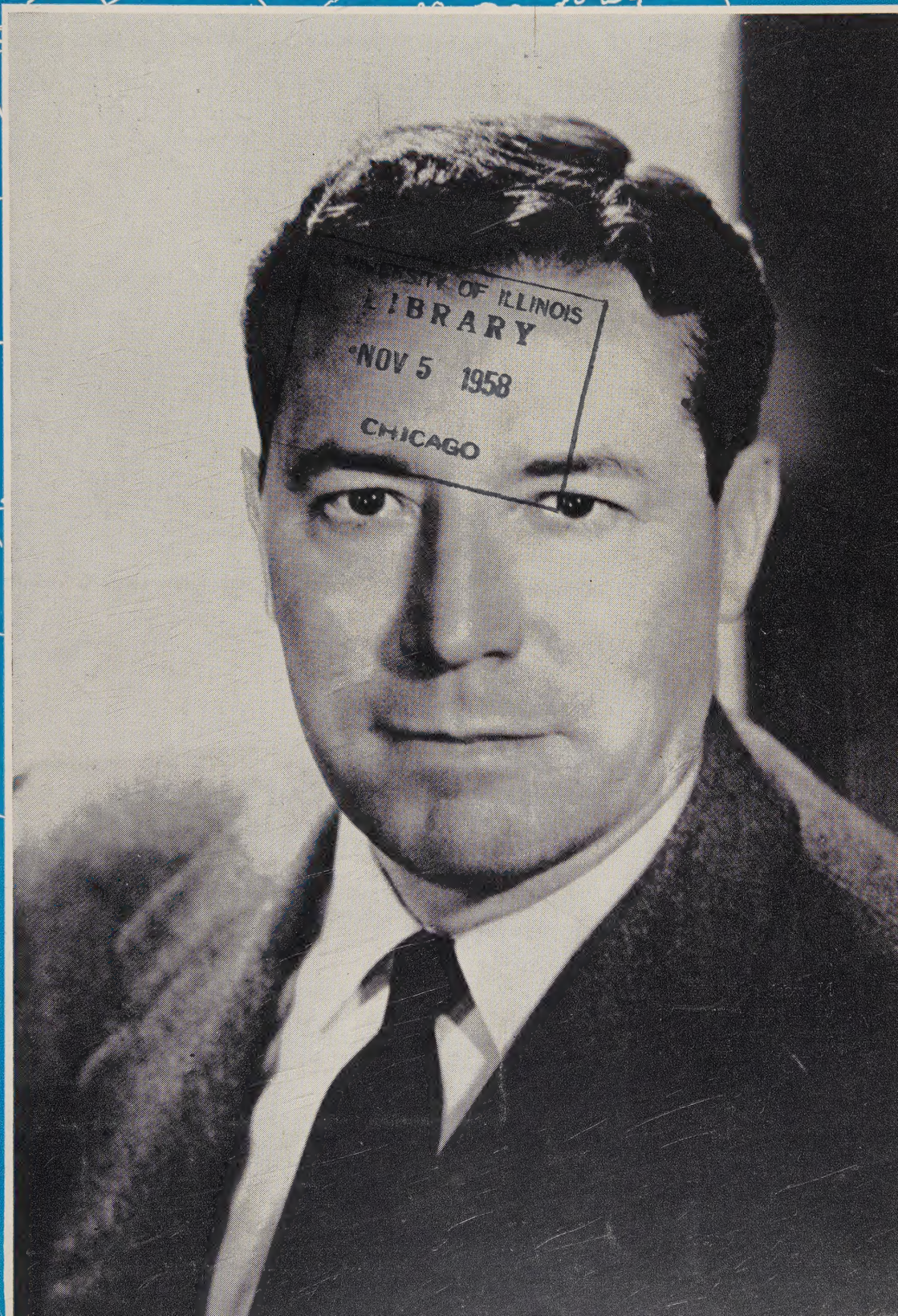
PASSES IN REVIEW

PHILADELPHIA 1958

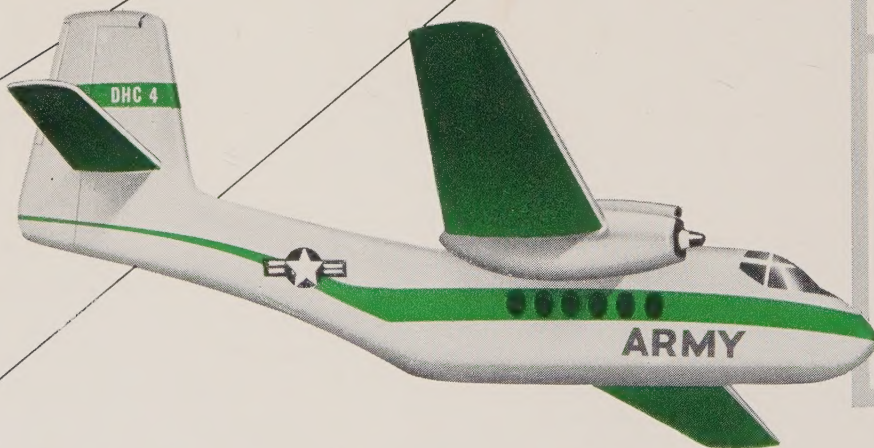
TO AIRPORTS A MUST!

CONVENTION REPORT

NOVEMBER 1958

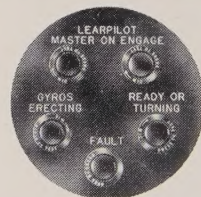


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Basically the same autopilot as the F-5 which proved its reliability and accuracy in jet fighters, this installation (Army designation ASN-22) in the flying Army's fleet of fixed-wing aircraft is dramatic proof of the system's versatility. The Army has also selected a modified version of the F-5 (Army

designation ASN-23) for automatic stabilization of the H-34 "Choctaw" rotary-winged aircraft.

The system weighs less than 70 pounds—lighter by far than any comparable autopilot. It is ruggedized for extremes in environment, operating with equal efficiency in tropical climates, sub-zero cold or extreme altitude. This modification of proven Lear equipment will bring greater utility, higher in-flight efficiency, and greater economy to Army aviation.

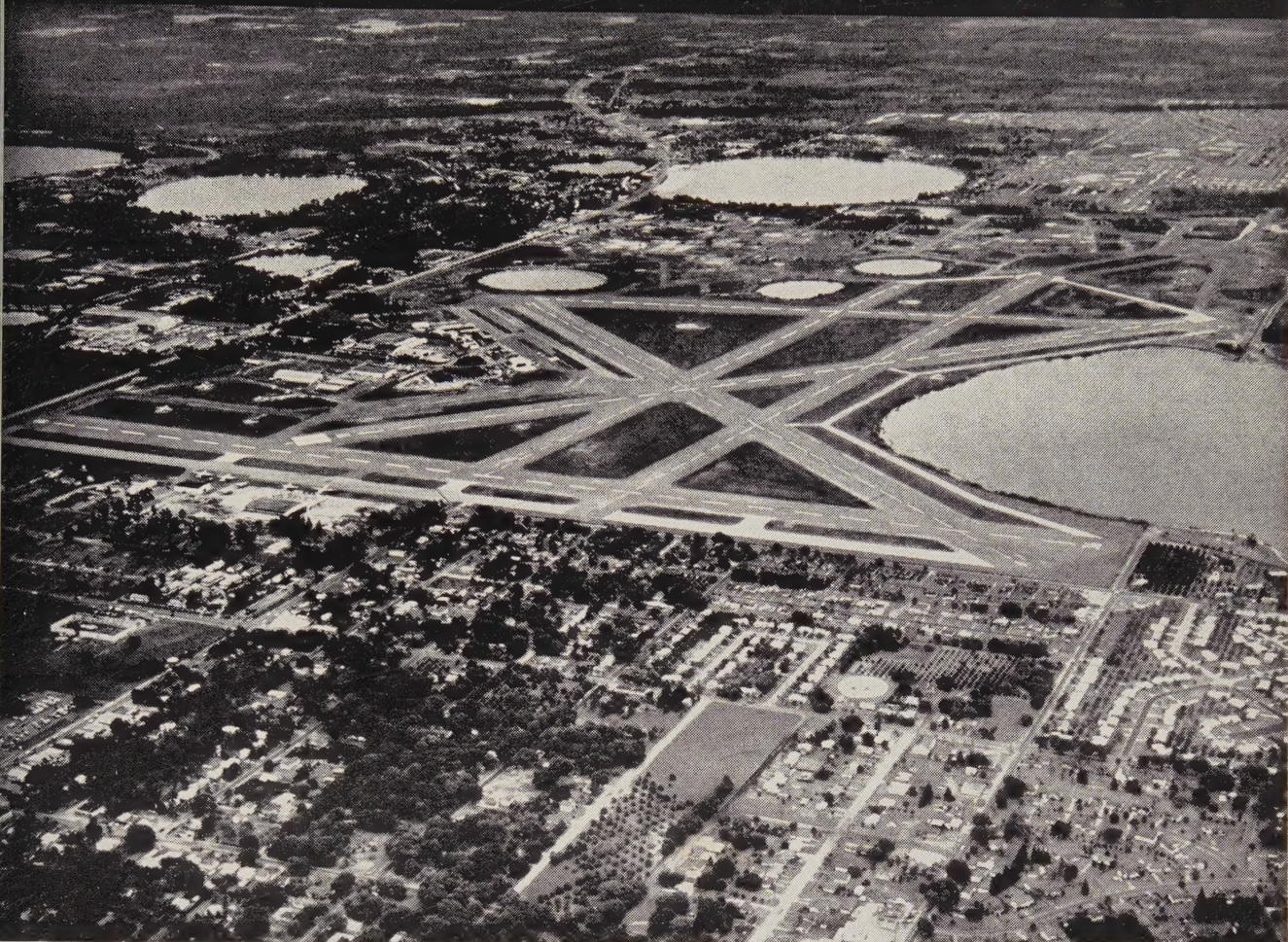
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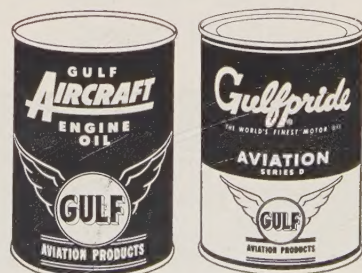
Series D, the detergent oil, or Gulf Aircraft Engine Oil, the straight mineral oil—both keep your engine Gulf-clean and safe.

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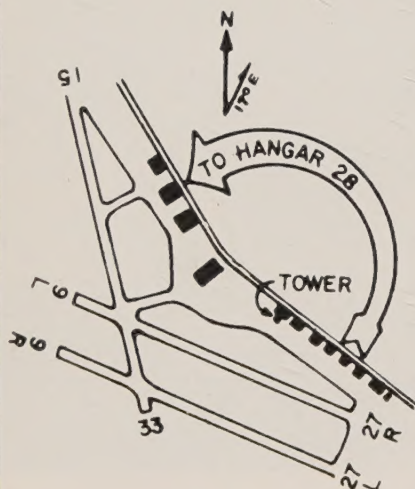
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Skyways

NOVEMBER, 1958

FOR BUSINESS

The official publication of the National Business Aircraft Association

COVER: Elwood R. Quesada takes office as Administrator of the new Federal Aviation Agency (FAA) this month. "Pete," as he is referred to by old-timers whose memories go back to the pre-World War II endurance flying days, has 34 years of active and retired service in the Army Air Corps and Air Force behind him. As a civilian, he was a director and officer of Olin Industries and Lockheed Aircraft before appointment as Presidential Aviation Adviser and head of AMB last year.

Aviation Roundup	6
Editorial	10
NBAA Director's Notes	12
Suite 344	13
Round Table: Are Current Physicals Relevant to Pilots' Health and Safety?	14
Aid To Airports Program A Must! Sen. A. S. "Mike" Monroney	19
NBAA Annual Meeting and Forum: Report	20
New Role of CAB	Hon. Louis J. Hector 29
Safety Awards—Pilots and Companies	30
NBAA Meeting Exhibits	34-35
NASAO Annual Convention: Report	53
Restricted Airspace Case May Set Precedent	57
NAVICOM	
"Touchdown" Glide Slope Research Continues	40
VHF Monitoring A Valuable Practice	40
GAAPG Takes Stand Against 58-5	41
Air Your Views	4
Greenhouse Patter ..	39
Helicopters for Business	42
Canadian Reports ..	48
Business Hangar ...	58
Nu-Avi-Quip	60
Skymart	63

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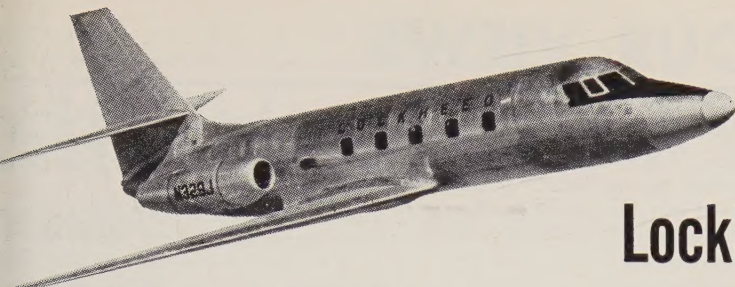
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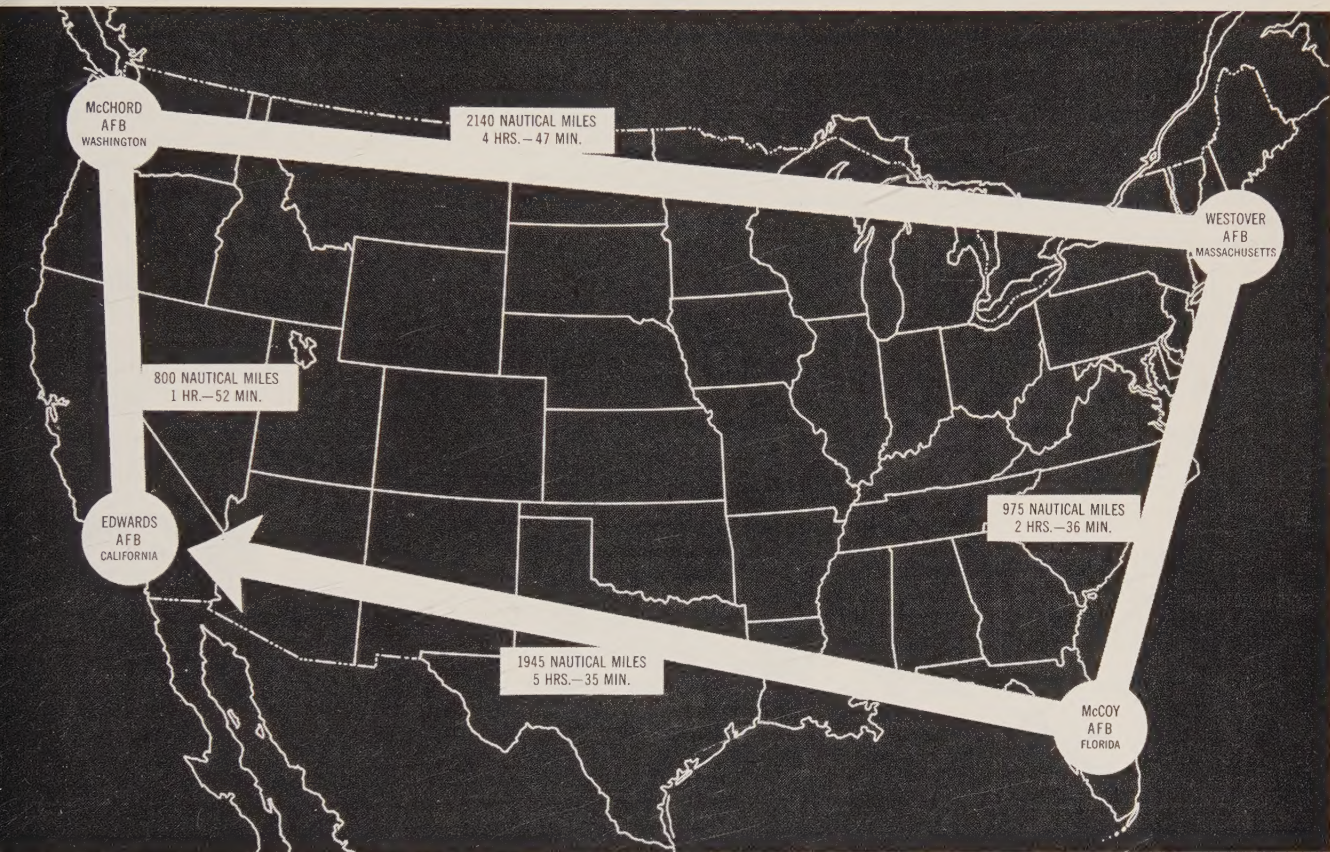
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Lockheed JetStar blazes 5,860 nautical-mile jet trail around U. S. A.—in 14 hours, 50 minutes!



The Lockheed *JetStar*—an economy-size utility jet trainer/transport of sweptwing design—dramatically demonstrated its high altitude, long-range training mission capability by making a four-corners-of-America flight—in 14 hours, 50 minutes flying time (17 hours, 50 minutes elapsed time).

No special flight equipment was needed by the crew and passengers aboard the record-setting *JetStar*. They flew in fully pressurized, air-

conditioned comfort, at altitudes up to 46,000 feet, at speeds up to 596 knots. Due to the aft fuselage mounting of engine jet pods the *JetStar's* cabin was so quiet everyone could talk in normal conversational tones at all times and be clearly understood.

The *JetStar* was equipped for this flight with 640-gallon "glove" tanks—giving it a range capability of over 2600 nautical miles. The production model *JetStar* will offer choice of

either two or four engines, configured to use General Electric J-85, Fairchild J-83, Pratt & Whitney JT-12, or Curtiss-Wright TJ-37 power plants.

Military missions for which the *JetStar* was designed include: navigator-bombardier trainer, airways and air communications inspection, fighter-intercept trainer, high-priority personnel/cargo transport and several other critical missions.

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AIR YOUR VIEWS

SAFETY—PROP FEATHERING

Dear Dick (Groux):

... very interested in the Safety Digest item August issue "Wouldn't Unfeather," credited to USN's "APPROACH" ... After reading it, I am of the opinion that (the Navy's "fix" was misleading and instead) these items needed attention:

(1) Feathering pressure cut-out switch, or replace the entire governor.

(2) Malfunction of pilot valve of prop distributor.

(3) Feathering pump and motor damaged by being run long and dry.

(4) Cockpit procedure and engine-out check list ... would cover cutting down the electrical load as much as possible ... closer liaison between pilot and shop.

The Navy answer should be interesting. Donald A. Mosher, Pilot National Distillers

AIRPORT STORY REACTION

Dear editor,

I want to thank and congratulate the SKYWAYS' staff on the excellent story on our Van Nuys Airport (August issue).

It is a comprehensive article on business aviation, well done and very readable.

We appreciate your cooperation and interest and will be glad to be of service at any time.

Charles R. Condon, Public Relations Dept. of Airports, Los Angeles, Calif.

FLYING PHYSICIANS ON FORUM

Dear Mrs. Henry,

I wish to thank you in behalf of the Flying Physicians and for myself for the privilege of being a part of SKYWAYS Round Table discussion (appearing in this issue).

S. D. Sullenberger, M. D., President Flying Physicians Association, Inc.

"... May I say that I enjoyed my participation in this discussion..."

Wesley E. Knaup, M. D.

"... enjoyed having you with us at Montauk ... looking forward to publication."

H. D. Vickers, M. D.

"COMPRESSING" OF AIRSPACE

Dear Lindy (Boyes),

Thank you for your comments about our stand on "compressing" of airspace. I am becoming more convinced than ever that this is a serious contributing cause to our mid-air collision problem. I predict we will continue to have mid-air collisions until we either get central control of civil and military aircraft, more electronic aids and/or spread out our traffic over wider areas.

It simply boils down to the fact that we have too much restricted area in the 11 western states and in the Atlantic Seaboard states which deliberately forces all traffic,

including the military, into very narrow corridors and over populated areas by virtue of the fact that they take away all the unpopulated areas.

You can understand when they create an airspace reservation they assign it frequently to only one or two aircraft to use and 90% of their own normal traffic and training is forced onto airways and in competition with the airlines and general aviation for what little airspace is left.

Clyde P. Barnett, Director of Aeronautics California Aeronautics Commission

BUSINESS PLANE USER STORIES

Dear editor,

We want to congratulate you on your October issue, which contained so many very fine testimonials concerning the use of private aircraft in connection with business operations ... particularly interested in the article, Flying Banker, by Walter G. Robinson, a member of the National Aero Club.

Robert Crawford, Executive Vice-President National Aero Club

NBAA ... FINE MEETING

Dear editor,

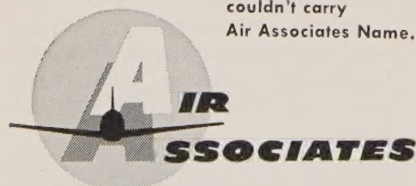
"... fine NBAA meeting in Philadelphia ... good attendance. New aircraft and products indicate we are gaining our objective."

Skip Wittner, Aviation Mgr. & Chief Pilot Kewanee Oil Company



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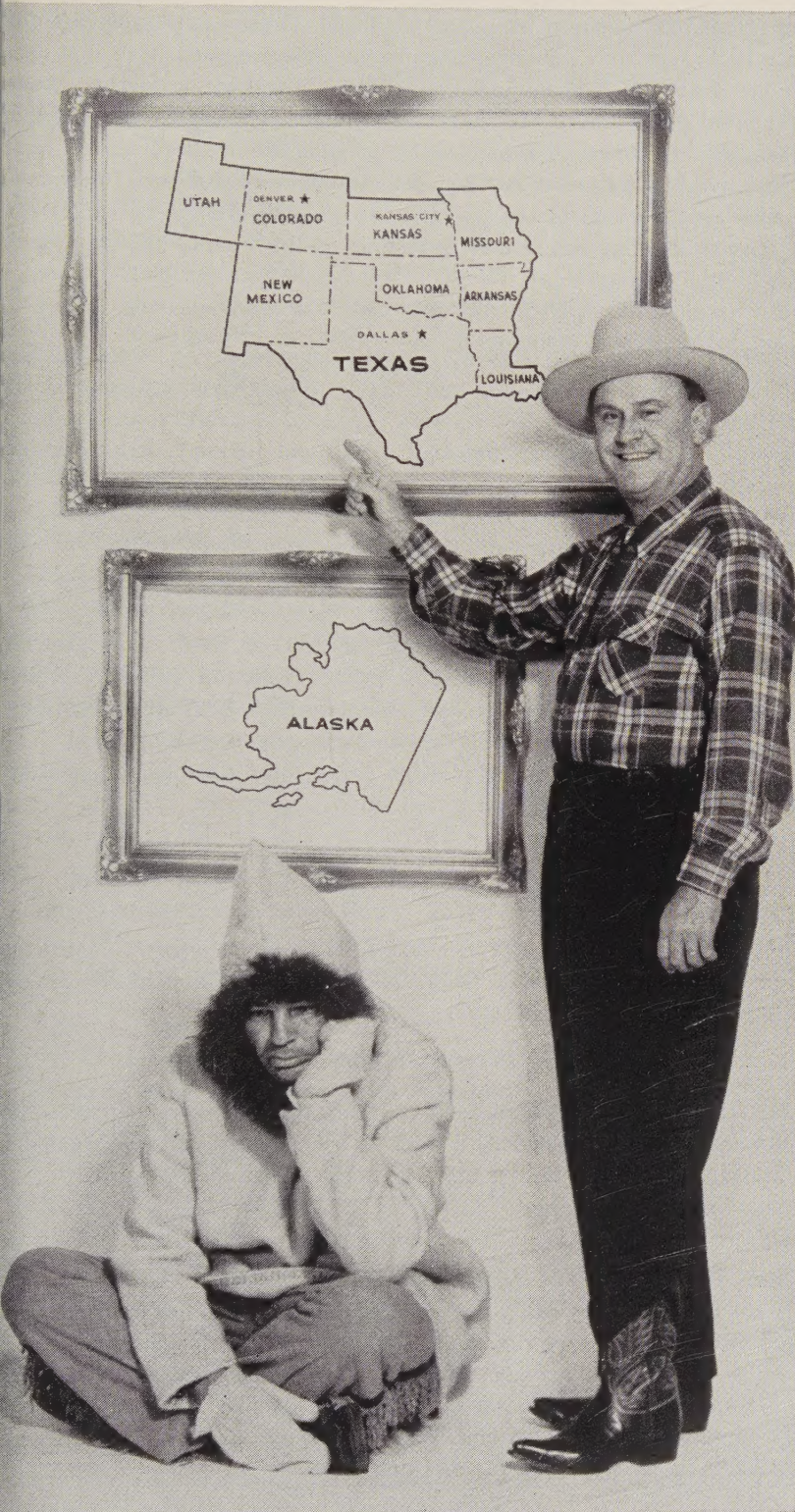
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TEXANS ANNEX 8 OTHER STATES:

SAC Sales Territory Dwarfs Alaska



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We don't want a ruckus with Alaska for many reasons, one being that we've got some good, paying customers up there. However, before Alaskans sound-off too much about being bigger than *anything*, we'd like to say they're not bigger than Texas with 8 neighboring states annexed to its hallowed boundaries.

A long time ago, we saw this Alaska thing coming. With the aid of some friendly manufacturers, we got ready for it in our SAC distribution territory by annexing to Texas the states of New Mexico, Oklahoma, Arkansas, and Louisiana. Quick, geographical arithmetic dictated that we also establish Rocky Mountain and Midwestern outposts at Denver and Kansas City, tying-in with Colorado, Utah, Missouri, and Kansas.

The upshot is that we now distribute flying's most reliable parts and accessories to fixed base operators and airlines in a great 9-state complex encompassing 901,664 square miles. This compares with a piddlin' 586,400 square miles in Alaska. Thus, the dejected Eskimo (our John Clement) and the happy Texan (our Exec VP George W. Jalonick, III).

PS: Seriously, we're proud of Alaska and Alaskans — and we'll tell 'em so if they'll come to the 1958 Aviation Distributors & Manufacturers Assoc. convention, Nov. 19-21 at Dallas' Statler Hilton Hotel.

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Aviation Roundup



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DOT AIRTRONICS

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Write for Zahns Airport Guide

Circle No. 6 on Reader Service Card

TRANSISTORIZED RADIOS, RECORDERS-INTERFERENCE CAUSE SUSPECTS with VOR and ILS equipment, warns CAA regarding portable equipment used by business executives in flight. Notice, in Airman's Guide Sept. 30, 1958, states, "... interference in some cases resulted in oscillation of glide slope and VOR indicator needles." NBAA investigation learned violent oscillations of pitch bar of ILS have been noted as result of transistorized portable radio operation. Similar oscillations of VOR needle observed under test conditions. Further investigation under way. However, no such interference noted with portable equipment operating from aircraft's electrical system. NBAA is participating in further investigation of this by RTCA Special Comm-88.

★ ★ ★

LOW-COST DMET EQUIPMENT project announced by Airways Modernization Board and CAA as joint undertaking to develop lightweight, DMET for "private flyer" and "general aviation" types of aircraft. Joint announcement made by E. R. Quesada, Chairman, AMB, and James T. Pyle, Administrator, CAA. Purpose is to increase utility of common civil-military short distance VORTAC navigation aid adopted as standard for the U.S.

★ ★ ★

ELECTROCARDIOGRAPH PROPOSED REQUIREMENT FOR FIRST CLASS PHYSICALS is subject of CAB Draft Release 58-17. This very important and much-discussed subject (see SKYWAYS Round Table this issue) is the result of the growing incidence of heart attacks in both airline and other flying. Basically, the CAB is taking the approach that possession of an ATR, whether flying as a public carrier pilot or not, carries a public responsibility warranting this precaution. Initial examination is proposed after age 35, annual after 40. Certificate issuance will remain as now, no delay but retractable if necessary.

★ ★ ★

HELICOPTER AIR LIFT of Chicago, Ill., signed management contract to operate local helicopter service for Ohio Valley Airways. William A. Geoghegan elected president of the new operation.

★ ★ ★

UNITED AIRCRAFT CORP. takes to the "air" to promote travel by air. New York firm Transfilm has produced 20-second TV commercial to be spotted in major travel markets. In addition United Aircraft is using radio spots.

★ ★ ★

EXECUTIVE JETLINER DESIGNED BY HANDLEY PAGE LTD. A research vehicle for demonstrating practical feasibility of laminar-flow technique for application to long-range aircraft, it is the latest in a series of studies undertaken by the British company. Powered by two Bristol Orpheus jet engines the swept-wing transport will have cruise range at 528 mph non-stop New York-London. Between London and New York, 3,440 miles, plane will carry 12 passengers in six and three-quarters hours.

★ ★ ★

NACA TAKEN OVER BY NAT'L AERONAUTICS AND SPACE Administration. The 43-year-old Nat'l Advisory Committee for Aeronautics was absorbed—personnel, facilities and research activities—by new space agency, headed by T. Keith Glennan, Administrator. NACA staff numbered more than 8,000 scientists, engineers, technicians and other employees.

Aviation Roundup

FLORIDA POLITICAL CANDIDATES found themselves for the first time bed with quizzes by aviation interests and other businessmen wanting to know w airports could be used for related non-aviation as well as aviation purposes.

★ ★ ★

AVIATION DIV., FLORIDA STATE CHAMBER OF COMMERCE, studying two problems: Re-evaluation of restricted flying areas which have grown so th military aviation that private and commercial aircraft are impeded in any areas; and, Legislation or policy to assure preservation of smaller air lds and to provide for keeping acreage available for larger jet airports. Pres- t bill in House Appropriations Subcommittee is designed to put "military t of the overhaul and maintenance business." Waldron F. Schanz, chairman, ate C of C Aviation Div., said bill had aroused much hostility, particularly in nsacola area where 4,400 civilians are employed by military and at Jacksonle where some 3,500 civilians work for military.

★ ★ ★

BUSINESS JET OWNER SOLOS MS 760 to become America's first busi- ssman-pilot to qualify in private jet. Henry H. Timken Jr., of Timken Roller aring Co., NBAA member, soloed the Beechcraft in six hours as did the mpany's chief pilot, George Dipple. Beech is marketing the jet in the U. S., nada and Mexico under license from the French manufacturer, Morane- ulnier. It is powered by two Turbomeca Marbore IIC turbojet engines, each th 380 lbs thrust. It uses standard aviation kerosene or jet fuel and may rn regular aviation gasoline.

★ ★ ★

TEN PERCENT TRANSPORTATION TAX REMOVED from small air xi and charter aircraft operations. Announcement made by Charles A. Parker, at'l Aviation Trades Assn. executive director, as a result of 85th Congress tion. Relief will apply to aircraft under 12,500 lbs gross takeoff weight. Tax moval to make smaller airplane taxi services comparable to motor vehicle xis which have had such tax exemption for long time, Parker added. Effe- ve date will not be for several months; no proposed date was given.

★ ★ ★

NEW AMB LABORATORY now undertaking testing and evaluating items r potential use in nation's air traffic control and safety program. The Nat'l viation Facilities Experimental Center is at Atlantic City, N. J.

★ ★ ★

FAST MIAMI AIRPORT BOND PAYMENT suggested by Wainwright and amsey, financial advisers to Dade County Port Authority. Dade County can tire its present airport bonds, refinance for expansions at saving of \$689,728. his windfall would result from paying off new bonds at faster pace and justi- ring borrowing more money to further recent developments for airport ex- ansion.

★ ★ ★

MOONEY MARK 20B expected to have 210 mph performance according to e Kerrville, Tex., company. Engineering flight tests now underway. Produc- on planned for late summer of next year. Price, under \$18,000.

★ ★ ★

MEN PILOTS OUTNUMBER WOMEN 40 to 1, CAA reports in recent com- ilation. Combined total number, 809,349. Cockpit considered "still a man's old."

★ ★ ★

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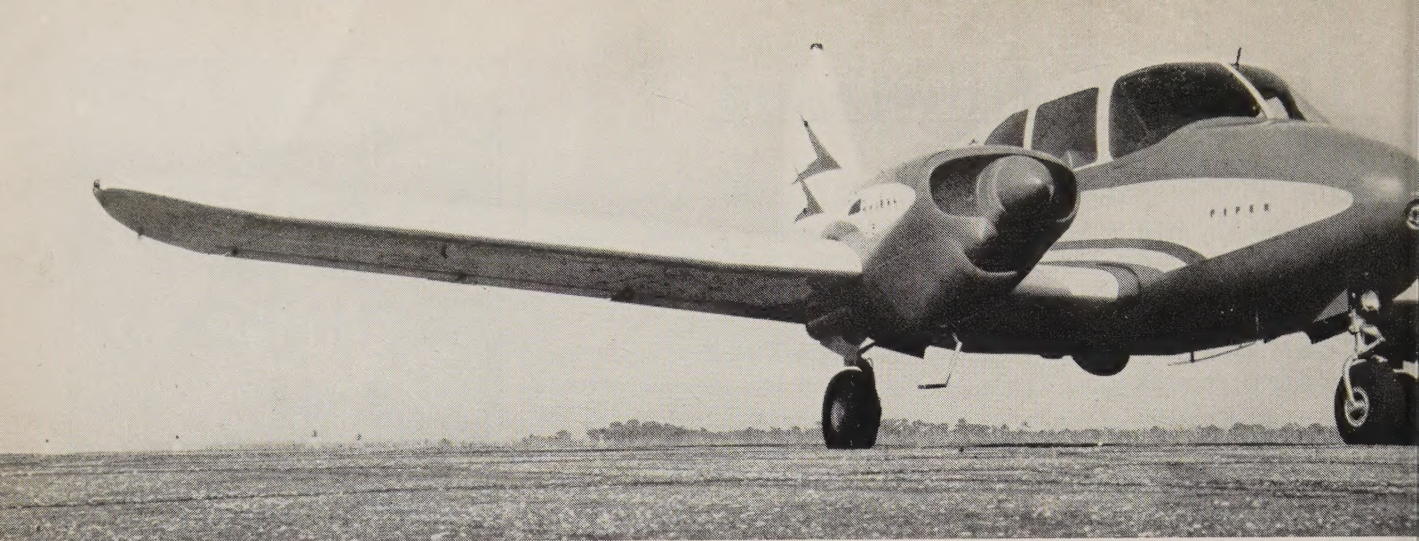
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u fly rested, relaxed, completely
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Editorial

THE "GREAT WHITE FATHER" IS DEAD!

Air space—our diminishing natural resource—is now being carved out and distributed under a new set of rules.

One of these basic rules is: the CAA is no longer the "Great White Father" of general aviation . . . or any one else for that matter.

The CAA (soon FAA)—charged with the encouragement and development of civil aviation—now is the *judge* of who gets what air space to use and the conditions under which that air space will be used.

It is, the CAA Administrator states, now incumbent on each air space user (individually or through organizational representation) to present his needs, his capabilities, his use of the air space to the CAA through the Regional Air Space Subcommittees of the Air Coordinating Committee.

There are six of these Regional Subcommittees in the United States. They are located in New York, Atlanta, Ft. Worth, Kansas City, Los Angeles and Seattle.

What are considered at these Regional Subcommittee meetings?

- 1) Restricted areas.
- 2) Airway Designations or Recisions.
- 3) High Density Zone designations.
- 4) Military climb-out corridors.
- 5) Flight test areas.
- 6) Airport traffic patterns.
- 7) High altitude route structures.
- 8) Location or elimination of radio aids to navigation.
- 9) Location of airports.
- 10) Designation of control areas and control zones.
- 11) Obstructions to air navigation (tall towers).
- 12) Designations of restricted and warning areas.

The military air space users are well represented at each and every one of these Subcommittee meetings. Staff officers from the Army, Navy, Coast Guard and Air Force have full-time assignments to prepare and present their cases.

The air carriers are well represented at each and every one of these Subcommittee meetings. Staff members from the Air Transport Association, assisted by individual air carrier representatives, prepare the cases for the airlines.

General aviation—of which business flying activity forms a major segment—is challenged to present its case.

How can this vital challenge be met?

It can be met only through matching or exceeding the military and the airlines in their efforts.

It can be done only if every aircraft owner, every aircraft pilot takes the resolute forward step—that of supporting to his fullest capability the aviation organization which he believes best represents his interests.

Many in general aviation have allowed the CAA to carry the burden of presenting the general aviation air space picture. They have become lulled by a "Great White Father" and his efforts to represent our case. They have not taken advantage of being team-members in general aviation.

The "Great White Father" is dead!

In his place there must stand strong, representative general aviation organizations to carry on forcefully the task of presenting our legitimate air space needs to the CAA.

For, without these general aviation organizations, *you* will truly stand alone against the might and weight of the military and the air carriers.

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* T. M. "RPM" REG. U. S. PAT. OFF.

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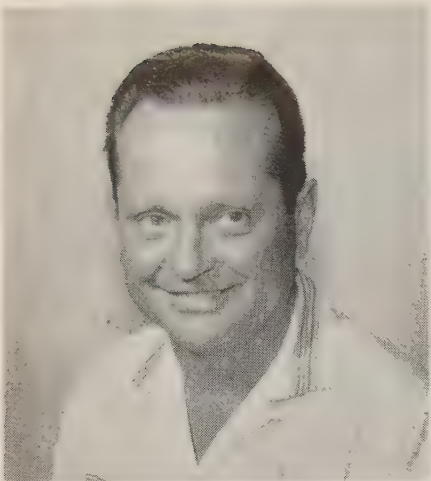
PETER GLUCKMAN, holder of many light plane distance records with this Beechcraft Bonanza. "I use RPM Aviation Oil Compounded because long experience has taught me I can depend on it to keep my engine running smoothly under all flying conditions."



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DIRECTOR'S NOTES

by Bill Lawton
Executive Director, NBAA



Appointment of Elwood R. "Pete" Quesada as the first administrator of the new Federal Aviation Agency by President Eisenhower was a bold decision.

Bold, because the President's decision skirted the desire of Congress which had decided in its passage of the Federal Aviation Agency Act, that the FAA Administrator should not and could not be a retired military officer.

By resigning his commission to accept the appointment, Mr. Quesada made it possible for the President to make the recess appointment, one that must come before the Senate for confirmation when it reconvenes in January.

The resignation of Mr. Quesada's commission, President Eisenhower said, "represents a sacrifice which I feel reflects his high sense of public duty."

"The fact that a man of Mr. Quesada's qualifications is obliged to resign his retired status from the regular Air Force," the President added, "to comply with the letter of the law so he can again serve his country does not, in my opinion, seem logical or desirable."

There is no question of Mr. Quesada's selfless devotion to his country either as a military man or as Special Assistant to the President for Aviation. His record is clear, unmistakable and outstanding.

As Chairman of the Airways Modernization Board, Mr. Quesada has shown great understanding of the almost innumerable problems which required quick, accurate solution. And, he has taken immediate steps towards solving these problems.

As Presidential Advisor, Mr. Quesada has repeatedly shown leadership and understanding of the highest degree in his dealings with both military and civil aviation representatives.

Difficult decisions, decisions which affect our military air power—the apportionment of air space between military and civil airspace users; the alignment and routing of Federal Airways to accommodate all classes of aircraft; the strengthening of our air traffic control system—are only part of the tasks now confronting the new Federal Aviation Agency Administrator.

Mr. Quesada knows, I feel quite certain, that those in general aviation will have their eyes glued on every word he writes, that their ears will be closely attuned to every word he utters. And, I am also certain that when a judgment is rendered which—in an effort to reach a needed solution—does in some degree adversely affect general aviation, that the hue and cry will immediately resound—"What did you expect from a military man?"

Even without a "military man" label, an Administrator would have, and assuredly has now, gigantic problems to resolve. The military strength of our country must be maintained consistent with our national requirements; the free flow of air commerce must be maintained in order that our national economy will not suffer; and the rights of the private individual in the air space must be considered and respected.

These requirements are vital, complex and inter-related. Each must be weighed, placed in perspective and a solution must be reached. Assuredly, these solutions will not please every segment of aviation every time.

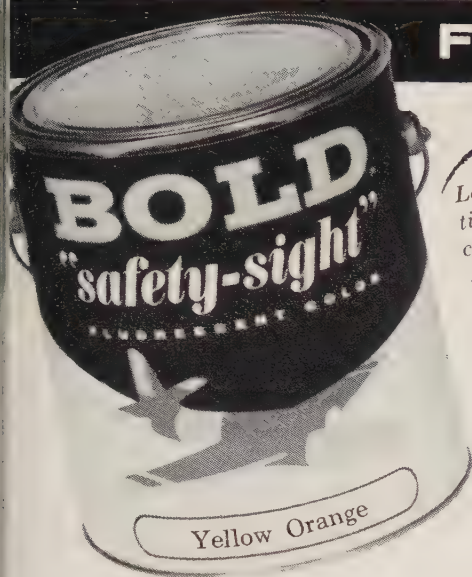
Mr. Quesada has demonstrated his abilities in the past, both as a military leader and as an astute civilian advisor.

His newest and one of his greatest challenges now lies directly ahead. His ability to do the job can be seriously hampered by the shout of "military man" at every bump in the road.

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Suite 344

On behalf of the President, Board of Directors and staff of NBAA, may we thank each and every one of you for attending and participating in NBAA's most successful 11th Annual Meeting and Forum.

Our speakers, Sen. A. S. "Mike" Monroney; Ned Dearborn, President, National Safety Council; and Louis J. Hector, member of CAB, were outstanding. (Someday I hope to collect joke books from Sen. Monroney and Ned Dearborn).

Nothing, but nothing, was left to be desired in the exhibit area. Sorry, I didn't have a chance to visit Penn Center to see the display of aircraft, but I did get out to the airport to see one SPECTACULAR. The Civil Air Show was the greatest arrangement of business aircraft "Fly-By" I have seen—from the "Whirly-Birds" to the Jets. Rode to the airport in a beautiful Buick came back to the downtown area in one of Bell's Helicopters.

The following is the slate of Directors and Officers. If anyone needs advice from your Board, please contact the National Headquarters or the Board Member in your territory. We are at your service.

Joseph B. Burns, President, representing The Fuller Brush Co., Hartford, Conn.

B. J. Bergesen, Executive Vice Pres., representing The Ford Motor Co., Dearborn, Mich.

John H. Winant, Treasurer, representing Sprague Electric Co., North Adams, Mass.

E. M. Beattie, General Electric Co., Westchester County Airport, White Plains, N. Y.

Henry W. Boggess, Sinclair Refining Co., Tulsa, Okla.

Gerard J. Eger, International Harvester Co., Chicago, Ill.

Jim Ketner, Jr., Texas Eastern Transmission Corp., Shreveport, La.

Walter C. Pague, ARMCO Steel Corp., Middletown, O.

C. F. Zimmerman, Continental Oil Co., Houston, Tex.

John P. Meyers, The Hubinger Co., Keokuk, Ia., was elected to fill the vacancy of our retiring Board Member, Ralph E. Piper, Monsanto Chemical Co., St. Louis, Mo.

Ralph says he may be retiring from being an active Board Member but he will always be an active NBAA member and will serve wherever and whenever he can.

On behalf of the Board of Directors, Ralph, it is my pleasure to inform you that we recognize the excellent, energetic and intelligent service that you have rendered NBAA during your incumbency. We feel that the high position which NBAA has attained has been in large measure due to your earnest efforts and untiring devotion.

WELCOME TO NBAA MEMBERSHIP. . . (REGULAR MEMBERS). . .

THE BON AMI CO., New York, N. Y., a manufacturer of household cleanser, operating a Cessna 310. NBAA Rep.: R. Paul Weesner, President.

CHATHAM CHEMICAL CORP., New York, N. Y., manufacturers of industrial chemical, operating a Douglas B-23.

NBAA Rep: Vincent H. Shea, President. Chief Pilot: James C. Pashley.

ENGELHARD INDUSTRIES, INC., Newark, N. J., manufacturers of precious metals, operating Lockheed Lodestar.

NBAA Rep.; Richard J. Buehler, Avia. Mgr. Chief Pilot: Louis J. Vanmansart.

(ASSOCIATE MEMBERS). . .

FREDERICK B. AYER & ASSOCIATES, Inc., New York, N. Y., aircraft sales, operating two Convairs 240, Lockheed Ventura and Grumman Goose. NBAA Rep.: Anthony J. Ming, Asst. to the President.

Chief Pilot: Bert R. Gordon.

CHARLOTTE AIRCRAFT CORP., Charlotte, N. C., selling of aircraft, aircraft part, engines, engine parts and aircraft leasing. NBAA Rep.: H. J. Caldwell, President.

(Continued on page 68)



FLYING PHYSICIANS and other panel participants are (l-r, front) W. J. Heritage, Drs. S. D. Sullenberger, T. C. Gentry, Lee Gillette, H. D. Vickers; (rear) D. V. Kiarsis, Herbert Ottewill, Drs. H. E.

Heise, H. H. Leet, J. M. Ballou, L. D. Bonar, J. T. Worcester, S. Chandler, C. A. DeLone, F. M. Coble, N. E. Mendenhall, W. E. Knap, J. R. Durham, E. J. Justis, J. R. Finlay.



August 1958

Montauk Manor, Long Island, N.Y.

The Relevancy Of Current Physical Certification Requirements To Pilots' Health And Safety

- Are current flight physical examinations adequate for safe flying, or are they too stringent?
- Are CAA physicals reliable measures of a pilot's general health?
- Are heart condition analyses (cardiographs) vital to pilot and public safety?
- Should psychiatric examinations be introduced at certain levels of certification?—or after an accident or alleged violation report?
- Why should pilots not fly with a cold or other respiratory ailment?
- Does experience warrant dropping the depth perception requirement on renewal applications?
- "... the brain that gets alcohol does not get oxygen!"—alcohol hypoxia.
- How should an examiner proceed when he suspects a condition that may require the opinion of a specialist? What's the effect on the applicant?
- Should restricted (copiloting only) certificates be issued Class I and II holders for non-waivable defects?

"Do we have the right sort of physical examination—that will insure safety in the air?" T. C. Gentry, M. D., asked this question in opening Skyways' forum discussion held during the annual meeting of the Flying Physicians Assn. at Montauk, L.I., N.Y.

Dr. Gentry, Round Table moderator, (Regional Flight Surgeon, CAA), continued with: The CAA has recently spent \$100,000 with the Flight Safety Foundation for a very comprehensive study of the medical aspects of civil aviation. Such a study has been needed for many years. The military services have been very active in both medical research and the clinical application of what they have learned about the selection and care of their pilots.

But civil aviation had been neglected in this respect. Some authorities had felt that civil aviation could utilize the facts learned in military medical research. This was only wishful thinking. Take, for example, the type of passengers carried on a commercial airplane. We have an old saying that "anyone who looks normal, acts normal, smells normal and can climb one flight of stairs (up the ramp into the plane) can be carried on a civilian plane." When you consider how many passengers are borderline cases—borderline heart cases, lung cases, anemic, or who are really sick and are going to a medical center for active treatment, or returning home after having been a patient in a hospital—then you begin to realize why the research done by the military could not be applied in a practical way to the problems of commercial aviation.

The Foundation in this remarkable job, had the benefit of

the experience of some of the most prominent men in our profession. The survey was broken down into sections: one panel was on the subject of vision, which had experienced ophthalmologists; another panel was on hearing and voice; another on cardiology; on diabetes; psychiatry; psychology; and finally, a panel on industrial and aviation medicine. Both civilian and military specialists were represented. Dr. William H. Ashe, Ohio State University; Dr. Ross McFarland, Harvard University; Dr. Norbert J. Roberts, Standard Oil of New Jersey; Dr. Otis B. Schreuder, Pan American World Airways; and Dr. William B. Shepard, Metropolitan Life Insurance Co., are a few of those who acted as consultants. Their findings and recommendations are most illuminating. For instance, it's a fact that, for more than 15 years in the military services, an electrocardiograph has been required when a man reaches the age of 40.

But we've never had a civil requirement like that except for the very small percent of pilots who fly for the scheduled airlines—only five of which have fulltime Medical Departments. Less than 20% of the pilots who carry passengers for any get a company annual physical examination, according to my information. All of the rest depend entirely on their FAA physical examination.

Standard Oil of New Jersey, for instance, has about 100 pilots scattered throughout the states, South America and the Middle East. Each of these pilots gets an "executive" type physical examination annually which would cost him about \$100 if he came into a clinic or a doctor's office. This could include an electrocardiograph, X-ray, blood studies or anything else that might be indicated. Standard Oil of N.J. often send their pilots to an ophthalmologist just to have their eyes thoroughly checked. This may cost another \$25 or \$50! The American Management Association has evaluated such a procedure and has determined that it is money well invested!

The CAA physical examination is largely a screening examination. There is no X-ray of the chest, cardiogram, Wasserman or anything that is essential in a complete physical examination. You have to find something suspicious to make you feel justified in telling an individual that he has to spend another \$10 to check something else. The examinee would say, "Well, he's hard to please; I'm not going back to him." He has to agree to this willingly, or he puts the CAA examiner on the spot. A more thorough CAA physical examination will contribute to safety in aviation to a degree never before seen in America or in any other part of the world.

Within Chandler, M.D.: You speak of the great sums of money spent on research for the pilot. This is fine, but unless examiners who are doing the examination are interested in pilots, aviation in general and know some aviation medicine, all of this research will go for nothing. We have a CAA-designated medical examiner here who makes the pilots wait three weeks to be seen, knows nothing of aviation medicine, will not go near an airfield and would not follow these research findings. This type of examiner should be eliminated.

Dr. Gentry: Some doctors are too careless in the medical certificates they give to applicants for pilots' licenses. This is especially true regarding heart disease, nervous and mental disorders, diabetes, visual defects, epilepsy and allergies. For instance, someone who has been hospitalized for a mental disease—maybe he was treated for schizophrenia, paranoid type, one of the more dangerous types; he had had electroshock therapy or insulin therapy; there's been some loss of memory. Maybe that loss of memory involves what to do when an engine starts getting rough. Such a pilot becomes an unsafe pilot immediately. Some examiners think in terms of duty on the ground and not about a man who is flying an airplane.

Consider the case of a man who has had a heart attack. No good doctor will allow him to shovel snow off his sidewalk or push a car out of a mud hole. Yet, we have people going

through the same routine, hospitalized for several weeks, requiring oxygen, confined to bed most of the time for several months. Then an examiner will give such an individual a certificate, and think he ought to be able to go right ahead and fly. They forget that he can be in trouble when emergencies come up. The stress and strain, plus some anoxia due to altitude, are just exactly like shoveling snow off the walk or pushing a car out of a snow bank. A borderline heart case has no business flying as a pilot when he's had a coronary like that.

H. H. Leet, M.D., (Director Leet Clinic): Neither does a borderline mental case.

Dr. Gentry: Exactly. As I understand it, most persons who are "abnormal mentally," when an emergency comes up, are motivated unduly by their emotions rather than by clear, logical thinking.

Dr. Leet: That's the cause of one of the highest percentages of accident rates, even more than physical defects.

Dr. Gentry: That's right.

S. D. Sullenberger M.D. (President, Flying Physicians Assn.): In reference to the FSF-CAA study, we had a member, John T. Flynn, M.D., of New York City, on that panel. The CAB asked our Association to give our opinion on the use of electrocardiograms for Class I (airline pilot) medical examinations. 70% of our members favored a Civil Air Regulation requiring an electrocardiogram; 11% were opposed; 66% felt that it should be taken at the time of initial examination; 10% opposed it; 43% felt that it should be taken at least by age 40, whether taken at other times or not; 1½% favored the taking of it in the mid-30's; .6% suggested the initial electrocardiogram to be taken at 45 or later; 7% opposed the age of 40 as the mandatory time; 72% agreed that it should be taken at least in Class I examinations after age 40; 8% opposed taking it annually after age 40. That about sums up our survey for the CAB.

Dr. Chandler: I believe the Electro-cardiographs should be started at age 35. However, one E.K.G. does not mean too much. Every time I call in a cardiologist, he sees little notches here and there that may or may not be normal. Therefore, I believe that several E.K.G.'s should be in order. Another point is that with high altitudes, the E.K.G. will be much different and will show changes that are not in evidence at sea level. I think these readings should be taken with exercise and not with the pilot resting on a soft lounge.

Dr. Sullenberger: We have three FPA representatives on the General Aviation Facilities Planning Group. Several months ago we met with the CAA and the CAB. They gave doctors in general a bad time about not filling in the examination forms correctly. We assured both that we would do all in our power to see that these forms are filled out and signed properly.

Dr. Gentry: It is essential because these records are legal documents.

Dr. Sullenberger: A question came up at this joint meeting of the GAFFPG-CAA-CAB concerning psychopaths, regarding examinations. I'd like to get your opinion, Dr. Leet. How much can we depend on the family physician, general practitioner, to examine primarily these individuals? Some felt that these physicians can recognize personality defects in individuals earlier than CAA examiners or anyone else.

Dr. Leet: Sometimes there is scarcely anyone better qualified to examine the individual than the general practitioner if he has a good knowledge of the family and family history . . . number of accidents he has had, how impulsive the individual has been, trouble he's been in, kind of judgment used, and if he can be candid in voicing his opinion. Often the "GP" can tell how the individual behaves in time of crisis . . . if he is subject to panic or impulsivity. But special examination by qualified specialists as psychiatrists or psychologists are necessary. Crux of the matter seems to center about the following:

In the past, interest and knowledge about psychological

study have lagged, and there hasn't been much emphasis put upon it. The greater and easier emphasis was necessarily put upon the physical examination and its different components . . . the eyes, hearing, coordination and good physical status as the heart, etc.

This was fine for the times, but we should not neglect one of the most important parts of an examination of the person as a whole—the personality. Now, with new knowledge and techniques we are in a position to err less. There are some valuable studies which could be applied to aviation. There are now available some easily administered tests that do not

have to be given by a psychiatrist. They can be given by any physician who has these problems in mind. They will bring out certain important personality traits and characteristics.

These tests can ascertain whether an individual has a tendency toward impulsivity, immaturities, compulsivity, instability, anxiety, panic, poor judgment or accident-proneness. About 80-90% of accidents in industry and civilian life are committed by approximately 3-5% of such persons . . . those who are accident-prone and have a tendency to show poor judgment under pressure and unconsciously act out

(Continued on page 44)

MODERATOR



THOMAS C. GENTRY, M. D., is Regional Flight Surgeon, Region One, CAA, at New York International Airport. He was Chief Surgeon, Flying Tigers, under Maj. Gen. Claire Chennault, in China for four years. He is Colonel (ret.), U.S. Army Air Corps. Was former Medical Director, American Airlines. Diplomate, American Board of Preventive Medicine in Aviation Medicine. Member, Aero Medical Assn. and Assn. of Military Surgeons of the U.S. He is a Fellow of the AMA.

ROUND TABLE PARTICIPANTS

H. DAN VICKERS, M. D., practices general surgery at Little Falls, N.Y. Past President of Flying Physicians Assn., editor of "The Flying Physician" and FPA representative to GAAPG. Licensed pilot since 1930. Lt. Cdr., MC USNR, 1942-46. Member of Aero Medical Assn., Aviation Writers Assn., Internat'l Society of Aviation Writers and C.A.M.A.

MILTON C. OAKES, M. D., ophthalmologist of Mansfield, Ohio. Member of American Academy of Ophthalmology and Otolaryngology, AOPA and Flying Physicians Assn.

W. J. HERITAGE, sales engineer, Narco, Fort Washington, Pa. Former radar man in Navy for four years. Flying for ten years; has commercial license with instrument, single and multi-engine land certificates. He is a QB member.

LEE GILLETTE, M. D., national director and charter member, Flying Physicians Assn., is of New York City. General surgeon, he was flight surgeon in ETO, 1942-1945. A private flier since 1939.

JOHN T. WORCESTER, M. D., president, Win-Door of New England. Chief of ophthalmology at Englewood, N.J., Hospital. Trained at Manhattan Eye, Ear & Throat Hospital. Member of AOPA and Flying Physicians Association.

S. D. SULLENBERGER, M. D., pres., Flying Physicians Assn. He is member of the Gen'l Aviation Facilities Planning Group, NAA, AOPA, CAP. He is major in USMC Reserve. Practicing medicine and surgery at Dandridge, Tenn. Total flying time is 2,500 hours.

SWITHIN CHANDLER, M. D., general surgery specialist of Trenton, N.J. Univ. of Penn. Medical School graduate. Practices at St. Francis Hospital and Trenton Gen'l Hospital in Trenton. Member of Flying Physicians Assn., AOPA and Central Jersey Pilots Assn.

E. JEFF JUSTIS JR., M. D., Wise Memorial Hospital, Wise, Va., in general practice. Graduate of Univ. of Tenn. Medical School. Member of AOPA, EEA, Flying Physicians Assn. Commercial license.

JOHN R. FINLAY, M. D., ophthalmologist of Port Chester, N.Y. He is Senior Asst. Surgeon and Attending Surgeon Retinal Service at New York Eye and Ear Infirmary; Asst. Ophthalmologist at United Hospital, Port Chester, and Greenwich Hospital, Greenwich, Conn. He is Airline Transport Pilot Examiner. Was flight surgeon USAF, 1947-49.

ALEXANDER M. MUNCHAK, M. D., is director of Pennsylvania Academy of General Practice, Scranton, Pa. Physician and surgeon, he is also a CAA Examiner.

HERMAN A. HEISE, M. D., of Milwaukee, Wisc., is Vice-Chm., Committee on Medico Legal Problems, AMA. Member, Nat'l Safety Council Committee on Tests for Intoxication and American Aeromedical Assn. Medical Res. captain USA (ret.).

H. HALBERT LEET, M. D., director, Leet Clinic (psychiatry and neurology), Lexington, Ky. Part time Asst. Clinical Professor, Univ. of Cincinnati School of Medicine and Kettering Lab. Lecturer, W.Va. State Hospitals, VA and USPH Hospitals at Lexington.

NORMAN E. MENDENHALL, M. D., obstetrician of Johnstown, Pa. Was Aviation Physiologist at Edwards AFB during World War II. Has commercial license, instrument and multi-engine ratings with 3,800 hours. He is a QB member.


J. RICHARD DURHAM, M. D., cardiologist of Wilmington, Del. CAA Airline Medical Examiner. Was flight surgeon during World War II. Member of Flight Safety Foundation Panel, Aero Medical Assn., Flying Physicians Assn.

FRANK H. COBLE, M. D., ophthalmologist in Richmond, Va. He is Board Member of Flying Physicians Assn., chairman of City of Richmond Disaster Committee, member of AOPA and Civil Air Patrol.

WESLEY E. KNAUP, M. D., ear-nose-throat specialist of Springfield, O. In Navy Medical Corps three years during World War II. He holds commercial license with instrument, single and multi-engine land ratings. He is Ohio Chairman of Flying Physicians Assn. and member of AOPA, QB, Aero Medical Assn., Civil Air Medical Assn. He is a designated CAA examiner.

L. D. BONAR, M. D., specializes in obstetrics and gynecology. He is Chairman, Metropolitan Aviation Commission of Mansfield, Ohio. He was a flight surgeon and held Service Pilot Rating in U.S. Army Air Corps, 1942-1945.

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Revival and Passage of FAAP Bill A Must!

Excerpts from speech delivered
at NBAA Convention, Philadelphia.

By A. S. Mike Monroney
Senator, Oklahoma



I feel very much honored by the invitation to address this association, in fact feel that I too am a business aircraft user, inasmuch as I use our Cessna 172 to round up Democrats—or catch maverick Republicans out in our state of Oklahoma.

"You are to be congratulated on the very fine record of safety of your members as demonstrated here by the many safety awards.

"As I looked around here tonight at the many safety devices and electronic equipments on hand, it reminded me of the story of the flying farmer who was going into a big controlled airport, and the tower operator said to him, 'You don't need to shout so loud! You're coming in five-by-five on our radio here.' The farmer replied, 'Radio? Who's using a radio?'"

"Business aviation has certainly come a far ways from the old conversion days of war-weary C-47's, AT-6's and B-25's. Today's business airplane, designed for business needs, is putting 7-league boots on in the chase after management efficiency.

"The business use of aircraft as a management tool has increased as by geometric progression. As world business increases, it is spreading into farther and more distant areas, particularly Canada, Latin America and Western Europe. The projection ahead is almost unbelievable.

"It is estimated that general aviation will have increased by 1970 to 107,000 aircraft logging 35 million arrivals and departures. Airline traffic will reach 118 million passengers flying 60 billion passenger miles. Air freight will triple. Aviation is facing a crisis!

"The problem of aviation's growing pains of near sonic speeds, overcrowded airways, exploding traffic gains—couldn't be solved by keeping aviation locked up in 'the basement' of the Dept. of Commerce—or by turning vital decisions over to boards and commissions.

"Aviation had come of age—and needed a home of its own, independence and the responsibility of leadership, to meet its own budget needs, to make decisions of its own on airspace allocation, on air traffic control and a common

system of communication and navigation aids, rather than almost one-half of the traffic under an entirely different system—the military. Like trying to run crowded Philadelphia traffic with the Sheriff operating the red lights and the Chief of Police the green lights!

"No wonder we had a badly scrambled air space situation!

"Like the railroad signalman who looked up the one track line and saw a train coming towards him going west. He then looked the other way and saw another train on the same track going east—'It's a hell of a way to run a railroad!'"

"Everyone in Congress and the folks in aviation, even the military, knew that there had to be a wedding of the two kinds of aviation—even if it had to be the 'shot-gun kind.' Before Grand Canyon, we all knew we were operating on borrowed time, what with 971 near misses in 1957. Grand Canyon, Las Vegas and Brunswick, Md., only pointed up that our time was rapidly running out. We had the general pattern of the type of legislation ready after Grand Canyon, and the writing began with Las Vegas. Westminster was the introduction.

"I have been introduced as the 'father' of the Aviation Act of 1958. The truth is that the FAA Act had as many fathers as Brigham Young had mothers—33 Senators, 1/3 of the Senate; aviation organizations of all kinds, even slow moving government officials—of the 75 inter-government agencies dealing with aviation—all knew that we were cleared for takeoff!

"We had the help, in many conferences, of your Bill Lawton and many others in general aviation, AOPA, Airport Operators' Council, State Aviation Executives; also ATA, ALPA, CAB, CAA, Defense and AMB. The difficulty was that, to get an effective agency with all-over control, it was necessary to take authority out of so many hands and put it in so few.

"The greatest problem was the military. They were frightened of civilian control—of what might happen in time of war—were reluctant to give up their freedom of airspace use and location of airports and missile bases. We provided for military participation at the

policy level and felt it was right to have a military man as Deputy Administrator.

"If I may digress for the moment, I am reminded by the presence in the audience here this evening of some senior men from another group that helped relate the planned legislation to the facts of operational reality, the air traffic controllers. Maybe it was unique as compared to customary practice but we felt that there was no sense in setting up a new framework for our vast and complicated airspace without consulting the highly-regarded profession that was going to have to make it work! Probably no testimony before the Sub-Committee was as dramatically effective as that of these men who literally hold our lives in their hands twenty-four hours a day working with a system and tools that were obsolete a decade ago.

"As a token of the mutual regard in which all these groups hold each other I was pleased to find a deep sense of responsibility to process all air traffic without discrimination be it military airline or business aircraft.

"That kind of healthy atmosphere will be continued and fostered by the degree to which general aviation groups such as yours display an active interest.

"When we withdrew from CAB some of its powers in order to center air safety regulations in the FAA, it wasn't liked a bit, but then it had usually delegated most of this authority any way. So, we upgraded all accident investigation to the CAB, taking it entirely away from the CAA (FAA).

"ATA feared the military might not go along, that opening up the entire aviation act might adversely affect the established airlines. ALPA feared military and ATA might dominate a single administrator. They wanted someone with power to act, but protection against precipitate action—diffusion of power. We wrote in appeal rights on pilot certification and suspension, to the CAB.

"The Administration wanted no veto over military airport and missile base locations—and objected to an independent agency on constitutional grounds. General aviation was afraid of a squeeze out of the air by the military.

(Continued on page 38)

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THE NBAA 11th ANNUAL MEETING • •



AIR TRAFFIC CONTROL SEMINAR, co-sponsored by NBAA and NASAO, attracted large attendance and lively discussion. Co-Moderators Crocker Snow, chmn., Research-Dev., NASAO, and

B. J. Bergesen, NBAA Board, flank speaker, Lt. Col. Carl Fisch, acting Technical Director, AMB. Popular CAA Administrator James Pyle (fourth from left, next to Snow) just dropped in.



NBAA RECOMMENDED STANDARDS MANUAL meeting drew largest discussion group. At rostrum, Harley Kysor, aeronautical con-

sultant and author of the Manual in collaboration with NBAA Committees on Operations, Management and Maintenance.



CONTINENTAL ENGINES AND ACCESSORIES symposium was headed by R. J. Fencil, Continental Motors representative, shown

speaking to assembled group. At left of rostrum is E. M. Beatty, Jr., of General Electric, NBAA Board, moderator of the symposium.

Principally because of very poor weather extending all across the eastern half of the country, the first day sessions suffered in attendance. Many who would have arrived Sunday afternoon and evening were cancelled out by combinations of very low limits and resultant ATC congestion.

Business Meeting

At the annual membership business meeting, Mr. Joseph B. Burns, President and Chairman of the Board of NBAA, re-affirmed that it was the purpose of NBAA to make and retain a favorable climate in government and elsewhere for the use of aircraft in business. This could not be accomplished, he said, by lobbying for special

advantage of its membership nor by acting to retard the legitimate developments in the field of civil air regulation.

Rather, it could be best accomplished by being a knowledgeable medium for exchange of the valuable experience and "know how" of its hundreds of member corporations and making available to responsible government agencies the considered judgment of the membership on legislative matters affecting civil aviation. He noted that the past year had seen 72 new member corporations join the ranks, and that there were 62 executive aircraft of 55,000 lbs gross weight or over operated by NBAA members.

It was announced that, in order to

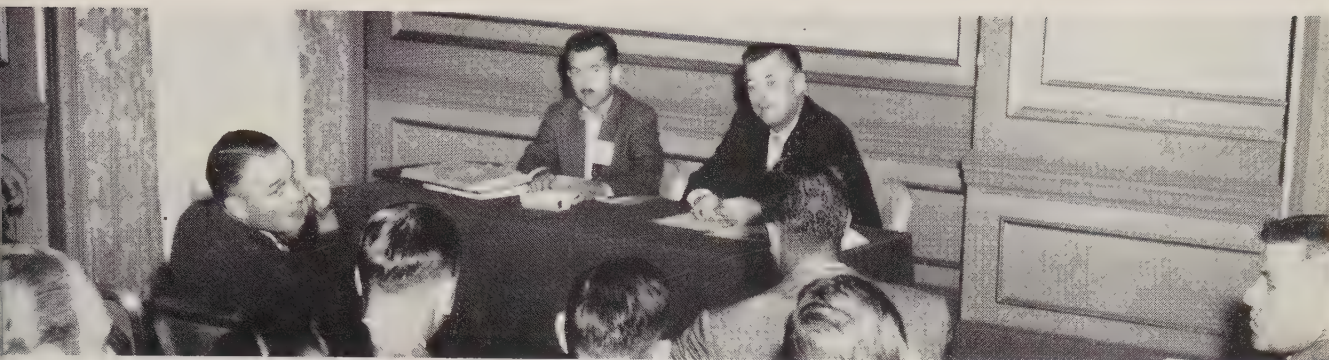
allow both NBAA staff and community officials to properly plan ahead, was desirable to poll the members present as to their preferences of 1961 meeting site. Both Pittsburgh and Tulsa had made offerings and after some discussion, Tulsa was chosen.

The members were reminded that would be Minneapolis in 1959, and Los Angeles in 1960.

Evaluating the Business Airplane

At the pre-lunch session on Monday a revealing and challenging program to provide the business aircraft owner and pilot with a definite yardstick to measure their aircraft's dollar-worth to their business, was given by I. Leslie Thomason, Director for Air

• • AND FORUM, PHILADELPHIA 1958



ROLLS ROYCE ENGINES AND ACCESSORIES panel had an audience of persons intensely interested in the application of turbo-prop engines to business aircraft of the present and the future. Rep-

resenting Rolls Royce of Canada, Ltd., was Bernard Lang who answered the myriad questions of the increasingly important power-plant field. Moderator was C. F. Zimmerman, NBAA Board.



LYCOMING ENGINES AND ACCESSORIES were discussed at forum. S. Campbell, Scintilla Div. of Bendix, addresses gathering.

At Campbell's right is Moderator John H. Winant of Sprague Electric, NBAA treas. Lycoming reps were J. Diblin, W. Walter.



PATENT AND WHITNEY ENGINES AND ACCESSORIES were discussed under guide of Moderator Walter C. Pague of ARMCO

Steel Corp. and NBAA Board member. P & W representatives were Walt Cake, John Frazee, Eric Eshe and George Dickerson.

education, Cessna Aircraft Company and James Herrick, Sales Manager. (See October SKYWAYS)

Although based primarily on their company's products for computations and designed as a sales tool for their dealers, Dr. Thomason and Mr. Herrick scrupulously avoided the name of their product in their presentation and instead stressed the Value-Per-Mile application to all aircraft makes and types used for business.

The values in the VPM approach were confirmed by representatives of such other business aircraft manufacturers as Aero Commander who pointed out that they had taken similar lines of inquiry to reveal to prospective pur-

chasers the real facts in the ownership and operation of business aircraft. In most cases, it was revealed, a significant saving over use of other transportation could be effected, as well as the increased efficiency in meeting competition. The earlier prestige angle is becoming less important as more companies take to owning their own aircraft and the very real economies to be accrued become more evident and important.

Powerplant and Accessory Forums

Although the earlier engine and accessories forums suffered from the fact that many of the membership were still arriving following the weather improvement Monday, the attendance at

later sessions picked up considerably. Many of the exhibits on the floor surrounding the main meeting room were of such high interest that a few crews found it difficult to tear themselves away from the latest in electronic gear, special devices to ease their flying burden, latest aircraft and powerplant developments and just plain good displays of aviation services by the exhibitors.

Much of the forum discussions centered around how to get the most performance and long maintenance life from both engines and accessories. Typical might be the comments of Ray E. Heller of Delco-Remy, who pointed out at several sessions that "open circuit"



SUCCESS STORY, the Philadelphia NBAA Meeting and Forum, was the result of the NBAA's hard-working committee shown here. Seated (l-r), Robert B. Ward, Atlantic Aviation; J. C. Davidson, Robert A. Morrison (chairman), John H. Sellers, Insurance Co. of North America; J. Story Smith, Wings, Inc. Standing (l-r), Gene Wyble, Wyble Advertising; David Dows, Airwork; Manny Davis, Northeast Philadelphia Airport; Frank Dyer Jr., Philadelphia National Bank; Don R. Redpath, Atlantic Aviation; William F. Hamill Jr., Aviation Div., City of Philadelphia; and William K. Lawton, Executive Director, NBAA.



AIRCRAFT IN PENN CENTER PLAZA showed Philadelphians business planes. In foreground are Pat Boling's record long-range J-35 Bonanza (N35U) and Piper Comanche. Cessna's Skylane and partially obscured 310, are at right. At left center is D-18 cabin mockup. Blaze Orange on N35U caused citizens to think the plane had caught fire.



"FIRST-NITER" BANQUET, a lively success with MC Joseph B. Burns, NBAA Chmn. (partially hidden by rostrum); to his right, Senator A. S. (Mike) Monroney, principal speaker; Maj. Gen. A. J. Drexel Biddle, Adj. Gen., State of Pa.; Mrs. J. W. Massey, Pres., WAA of Kansas; NBAA Exec. Dir. Bill Lawton; B. J. Bergesen, Ralph Piper, E. M. Beattie, C. F. Zimmerman, all NBAA Board members; and Richard W. Groux, Asst. to Exec. Dir.

operation of generators, even in short local operations, deteriorates generator brushes for lack of the "lubrication" afforded when the designed current

flow is present! Such common mishandling as exceeding 80% of rated generator capacity or over-cranking of starting motors (more than 30 seconds

without pause for cooling) only serve to reduce usable life of these vital engine accessories.

On pilots' complaints of exorbitant maintenance charges, R. J. Fencel of Continental pointed out that very often such costs are run up by excessive trouble-shooting time where better pre-analysis or diagnostic techniques, more complete pilot reports of symptoms would reduce overhaul and repair costs.

"First-Niter" Banquet A Gala Affair

At the First-Niter Banquet on Monday the turnout reflected the day's weather improvement. Major General A. J. Drexel Biddle, Jr., The Adjutant General, State of Pennsylvania and Chairman of very active Pennsylvania Aeronautics Commission, extended the greetings of the Keystone state and recounted some of the positive steps his organization is taking to enhance the safety and encourage business flying.

Mr. Louis R. Inwood, Deputy Director of Commerce for Aviation, City of Philadelphia, welcomed NBAA and NASAO to the "City of Brotherly Love" and in the name of the Mayor, read a citation proclaiming Wednesday, Sept. 24th, when the NASAO (Nat'l. Assoc. of State Aviation Officials) group joined with NBAA, as "Aviation Day."

President Joe Burns enjoyed the most pleasant duty of the evening when he introduced the beautiful Miss Marjorie Ott, "Miss Business Aviation of 1958." Miss Ott is secretary in the executive department of Dare, Inc., aviation radio manufacturer. That the selection was a popular one was confirmed by the rousing ovation that was given Miss Ott while her boss, Elliott Polansky, Sales Mgr., standing by, could hardly restrain his gratification at the reception.

Mrs. J. W. Massey, President, Women's Aeronautical Assn. of Kansas, spoke briefly on the decision to withhold the Annual Safety Award of the group because of the small number of competitive candidates submitted and proposed an improved method of circularizing the business flying industry for fuller submissions in subsequent years.

The evening was fittingly climaxed by the very excellent and enthusiastically received talk by A. S. Mike Monroney, Senator from Oklahoma and the co-sponsor of the FAA bill (reported in full elsewhere in this issue).

Pilot Safety Awards Luncheon

At the Pilot Safety Awards Luncheon on Tuesday, Mr. Ralph E. Piper, Monsanto Chemical Company and retiring NBAA Board member, original sponsor of the very effective and outstanding NBAA safety program, made the presentations to the 55 "Million Milers" and 95 "Half-Million Milers" who have flown in excess of those figures respectively without accident, a significant increase over past years.

Continuing the increasing tempo of the meeting, Tuesday afternoon found the Weather Bureau program (reported elsewhere in this issue) and the Recommended Standards Manual forums well attended. Before commencing

he body of his presentation, Mr. Newson A. Lieurance, Director, Aviation Weather Services, U. S. Weather Bureau, paid tribute to the outstanding efforts of NBAA through its Executive Director Bill Lawton, to support the dire need of the Bureau to obtain the support and funds with which to meet the increasing demands for more, faster and more accurate weather information and dissemination.

Standards Manual Pro's and Con's

The NBAA Recommended Standards Manual was expected to produce some good action, but for awhile it looked like a "sleeper." Then a few of the large NBAA audience found their feet and tongues at the same time and the fur began to fly.

From a general acceptance by those who had had time to familiarize themselves with the Manual's contents, the discussion successively centered on the Management, Operations and Maintenance Sections.

Mr. Henry Boggess, NBAA Board member and Moderator opened the discussion by introducing Mr. Harley D. Kysor, Aeronautical Consultant, who was engaged by NBAA to compile the manual with the assist of committees from the Board and many other sources. Mr. Boggess also read into the record the SKYWAYS editorial of the October issue—A New Standards Manual is Born—which he said "very well expresses what NBAA is trying to do" in the formation and encouragement of a set of standards for business aircraft management and operation.

Mr. Kysor, while modestly sharing the credit for the work with the NBAA Manual committees, pointed out that it was intended primarily as a guide line framework within which the user could fill out or add specifics suited best to the type of operation. This was the only approach practicable to a field that includes a range from single-engine, personally-flown business aircraft to large, multi-engine professionally-flown fleets.

In this respect, it appeared that most additions and modifications might appear in the area of the Management Section. Mr. Don Richardson, Minnesota Mining & Mfg. Company, member of the committee on the Management Section, felt that most important was a means of communication between management and the people running the flight operations.

A great deal of interest was shown in a suggestion that the subject of insurance should be a feature of the manual, because many small or larger operators apparently do not fully understand the increasing importance of the proper type and amount of coverage in today's high density traffic age.

It was reaffirmed that much of the material had to be in the form of generalizations and recommendations to avoid any implication of attempting to usurp individual management's prerogatives to control the operations of their own companies.

Re the Operations Section, many of the specifications in the manual revolve

around already existent and acknowledged Civil Air Regulations. Often these are not applicable, as in the instance of TakeOff minimums and operation in forecasted or known icing and severe turbulence conditions. It was noted that although no dictates were implied or conflict with pilot responsibility for ultimate decision, commonly accepted practice at comparable-level, for example, in other flight operations areas form a good basis for conservative approach to these problems.

Requests for specifics of such performance guides as accelerate-and-stop data for business aircraft for which no CAA-approved figures are available, was deemed an area in which it would be highly questionable to pursue a policy of publicizing unofficial data. Reference was made to more diligent study and application of the airplane



B. J. BERGESON, NBAA Exec. Vice Pres., Ford Motor Co., was co-moderator of the joint NBAA-NASAO Air Traffic Seminar.



CONGRATULATIONS ARE EXTENDED to Miss Business Aviation, Mary Ott, by (l-r) NBAA Exec. Dir. William K. Lawton; Senator A. S. (Mike) Monroney (Okla.), co-sponsor of the FAA; Maj. Gen. Drexel Biddle, Adj. Gen., State of Pa.; Joseph B. Burns, NBAA President.



BUFFET LUNCHEON preceded Air Parade. Held in Atlantic Aviation's huge hangar, the repast and camaraderie was enjoyed to the point that some missed Air Parade opening.



STATIC AND FLYING DISPLAY OF BUSINESS AIRCRAFT on Atlantic Aviation ramp at Philadelphia Int'l Airport. The Beech 4-place MS 760 jet, owned by NBAA member Henry H. Timken Jr., attracted much attention as group gathers around the plane (center left). Other new models of considerable interest were the Lockheed JetStar (extreme left center), Fairchild F-27 and Grumman Gulfstream (left of large hangar). Two Convairs (right) are Allison Turbo-prop versions; one, the Ayer-Line 240 Executive conversion.

manual to these problems.

One pilot for a large company told how they handle the problem of undue pressure to operate into inadequate airports. On each occasion that a pilot makes an election to pass up a field for good cause, he makes a note and the limitations are publicized within the company to forestall inadvertent requests to put into that field.

The very fruitful and spirited exchange ended with the reminder that the opinions, suggestions of all members to improve the manual were desired and that all contemplated additions, changes would be fully distributed to the membership for reaction before insertion.

Dynamic Exhibits Held Crowds

The exhibit area was never without

customers during the three days with the exception of the evening hours. The abundance of displays of latest aircraft, powerplants and accessories, operational and maintenance services made a never-ending panorama. Many innovations caught the interest of those present with dynamic displays or activities designed to tell the exhibitors story better than the traditional button-hole routines of yore.

One of the most popular exhibits which got a daily visit from just about everyone, to vie in the rivet-guessing contest, was the Aero Commander 680E Flight Deck. Closest guessers each day were awarded a share of Rockwell-Standard (parent company) Corporation common stock. A bonus gift to all contestants was a Land-Polaroid photo



DOCTOR LIVINGSTON? No, it's Bill Lawton in the BOLD pith helmet with Manny Davis, showman MC of aircraft fly-by. The "Safety-Sight" headgear, Skyways' Ray-O-Vac flashlights and Aero Design's "pilot photos" were popular give-away souvenirs.

taken at the controls of the mock-up.

Another top feature was the Heated Windshield display by Sierracin. Employing a cycling refrigerated landscaped box, the effect of the heated and unheated portions was dramatically evident.

"Takeaways" Very Popular

'Takeaways' were also in abundance and by now the country should be inundated, judging by the way some were snapped up. Probably the most spectacular were the BOLD "Safety-Sight" sun helmets in fluorescent colors. If the Lawter people didn't get trampled in the rush, it wasn't their fault and later at the airport in the Air Parade show, the ramp and hangar areas were literally dotted with these bright spots of color.

We feel proud in noting that SKYWAYS' RAY-O-VAC pocket flashlight, vied with the above as the most popular treasure to spirit away from the convention. If any present didn't get one, they must have been halt, mute or blind because enough were issued to illuminate half the keyholes in Philadelphia, not to mention the instrument panels for which we are assured everybody wanted them!

North American Insurance (INA) had a very nice touch in their fine appointments calendar. Aero Quality (Sonotone Batteries) distributed some very handy small booklets of Weather Bureau unlisted numbers.

We heard unconfirmed rumors that Wilbur (ZepAero) Zep's portable oxygen cart resuscitator was the most popular and called upon "giveaway" but you can never trust these rumors!

Manufacturers' Answers To 58-5

There were many other little, nice touches that distinguished the displays and would take a volume to describe them all. Instead we urge our readers' attendance at the succeeding annual meetings. On a serious note, the progress that was shown in aviation electronics by outstanding radio and electronics manufacturers left a most indelible impression, one that should dispel any lingering doubts that that



FAIREST OF THE FAIR, Mary Ott is introduced as "Miss Business Aviation of 1958" by Joseph B. Burns, NBAA Pres. & Chmn. of the Board. On Miss Ott's left, and finding it difficult to hide his pride, is Elliott Polansky, sales manager of Dare, Inc.

AiResearch Custom Lounges

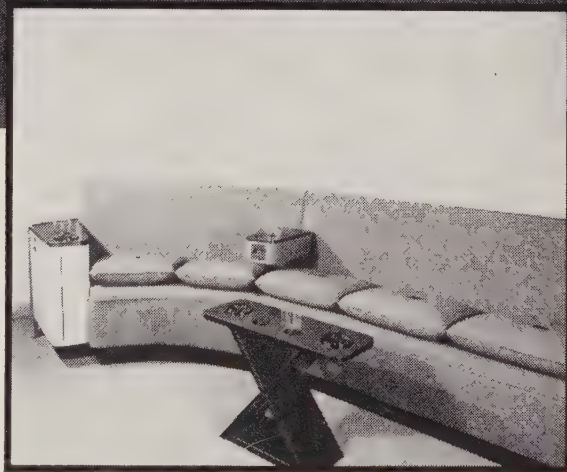
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Your inquiries are invited.



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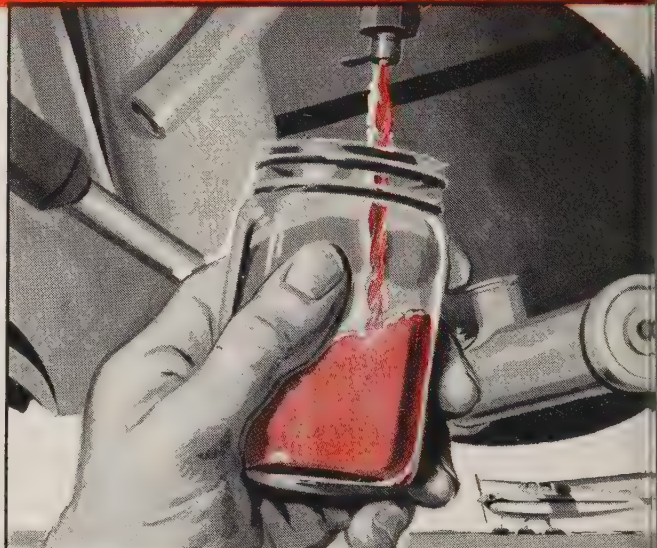
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WING TIPS



WHEELS DOWN ON GO AROUND. When you miss an approach and take a wave-off, it's good technique to leave the wheels down on the go around. Thus you avoid the chance of forgetting to lower them again before landing.



GAS CHECK. Keep an old jar, or even an empty tin can, handy when checking your fuel supply prior to take-off. Drain-off at least a cupful of fuel and examine it for color, water, and dirt which might forecast trouble.



CLOSE FLIGHT PLAN. Upon arrival at destination, be sure to close your flight plan with the CAA. If this isn't done, your plane will be reported missing and a search will begin. Result: embarrassment for you, a possible fine, and great expense for the government.

REMEMBER: For "Happy Flying"...look for the famous ESSO Sign for the most dependable aviation products.



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HERRYMAKERS AT PENNSYLVANIA DUTCH NIGHT display toothy smiles for cameraman. Paced closely (l-r), for mutual support, are J. Storey Smith, pretty girl, Frank Dyer, Jr., pretty girl, "Doc" John H. Sellers, Gene Wyble, pretty girl and J. C. Davidson. (On advice of counsel, ladies' names are withheld.) Note quote on the aprons (*Ve get too soon old and too late schmart!*). The glasses hold Old Original Penn Aqua Pura 100 Proof.

Industry is current with and indeed ahead of the government requirements for operational needs of business flying and at a price that is within the reach of all classes of operators.

Completely new airframe designs, engines and accessory equipment were more dramatically displayed Wednesday at the airport but such static displays as the Philadelphia Center Plaza probably brought home for the first time to the local citizenry, the extent and serious mien of business flying.

Air Traffic Control Seminar

The Air Traffic Control Seminar on

Wednesday morning was the first joint activity of the NBAA with the National Association of State Aviation Officials. Co-moderated by B. J. Bergesen, Ford Motor Co., NBAA Board and Crocker Snow, Chairman, Research & Development Committee, NASAO. John H. Hilton, Chief, Planning Division, Office of Air Traffic Control, CAA delivered a presentation on the plans of CAA with respect to currently available hardware and methods of improving the air traffic picture now in process of implementation. Mr. Hilton described the joint ADC-ARTC radar program



OXYGEN SERVICE CART demonstration is made by Wilbur Zep of Zep Aero (r) to Henry Boggess, NBAA Board member. Service was provided during meeting at Bellevue-Stratford. Consternation on Boggess' face is result of discovery that Zep rigged his device to produce oxygen daintily flavored with well-known convention staples—liquid variety.

(SKYWAYS Oct.), the record CAA outlay for air-nav and ATC facilities (SKYWAYS Sept.) and the IBM-RAMAC computer to speed airways operations (SKYWAYS this issue).

Segregated Airspace A Probability

The goal, he stated, was positive control of all air traffic desiring or needing it. As an example, free access VFR to any airway or community and controlled to any busy airport and certain altitudes. He envisioned a three-layer route structure—up to 15,000, to 23,000 and above respectively.

Lt. Col. Carl Fischer, AF, Acting Director, Technical Division, AMB, spoke of the early activation of the Experimental and ATC research work at Atlantic City and some of the surveys and contracts let to lay out the airways systems of the future (SKYWAYS Aug. and Sept.). He cited results of "high-speed turnoffs" in shortening landing intervals at congested airports. He anticipated that in the interim future, "minimum-equipped" planes would be able to operate with some restrictions and that eventually improved techniques using better, 3-dimensional radar would minimize the need for airborne equipment.

CAB to Assist FAA in Rule-Making

Robert G. Carnahan, Chief, General Rules Division, CAB, reviewed briefly the rules-making activities of CAB and outlined the areas of economics and safety in which it is anticipated the CAB will be able to assist the new FAA in its rule-making functions. He noted a great need for better understanding or the meaning and intent of many air rules and regulations and quoted the instance of the new personal business pilot who sought to enter the DCA Hi-Density Zone in low visibility conditions. The tower queried him as to what basis he was "operating on," meaning VFR or IFR. His reply disrupted radio traffic for a while "... on the GI Bill out of TEB!"

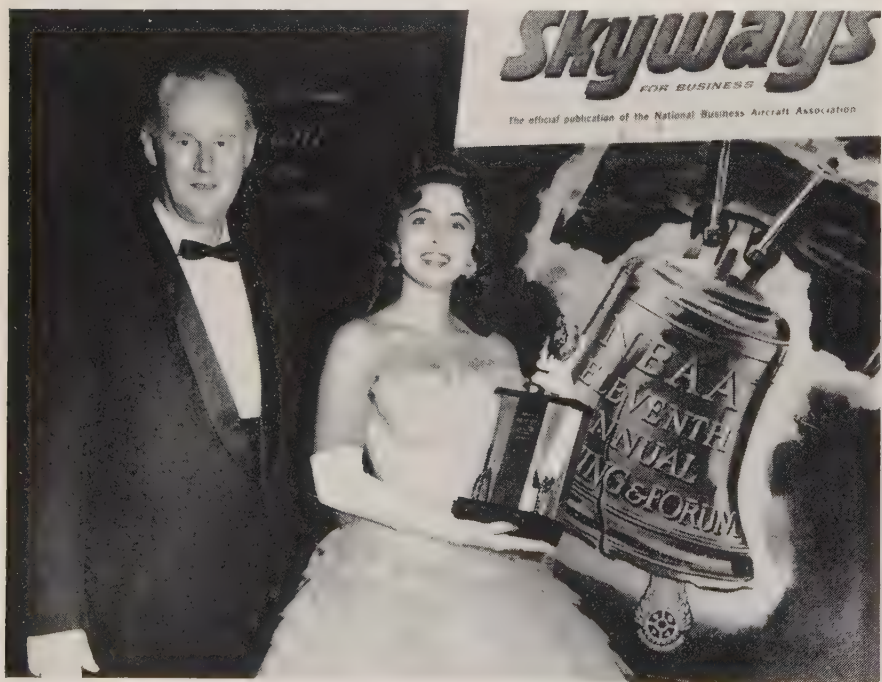
The question and answer period was brief and reflected the apparently broad and comprehensive coverage of the subject by the panel participants. It was elicited that enough near-miss reports had been received to establish a usable pattern, that investigation of the pro's and con's of fluorescent paint was continuing, that the values and problems of speed regulation as an anti-collision measure were being examined. The discussion ended on a science-fiction note when it was remarked that ultimate development of anti-collision techniques and automatic collision avoidance gear could result in a system of completely uncontrolled IFR operation!

Civil Air Power Parade & Fly-By

Weather control being still a long ways off, it is certain that the presence of the WB contingent, including Chief Pilot Geo. Brewster had little bearing on the pleasant, sunny, clear day that blessed the Civil Air Power Parade at Philly International that afternoon. Without question, virtually the entire attendance of NBAA and NASAO removed itself from downtown to the



SKYWAYS' SUITE featured one of the more unusual novelties with its Beef Broth-on-the-Rocks served from a gleaming, illuminated fountain, supplied by Campbell Soup Co. Many varied and interesting combinations were discovered by ingenious guests, among whom are seen above, (L-r) Henry Boggess, Jim Ketner, Jr., Miss C. M. Cearnal, John H. Winant, C. F. Zimmerman, NBAA Board Members. ("CM" is Exec. Dir.'s sec'y.)



"MISS BUSINESS AVIATION of 1958" is beautiful Mary Ott shown with handsome Bill Lawton, NBAA Executive Director, in the lobby of Philadelphia's hospitable Bellevue-Stratford Hotel by the Liberty Bell which was keynote of the eleventh annual NBAA meet.

field, by bus, cars and helicopter (as supplied to the extent practicable by Bell and Republic). By this time, the third day, the field was alive with both parked and moving aircraft, of which it was quite noticeable that a very large percentage were vivid with DayGlo and other fluorescent paints. The contrast in visibility to unmarked aircraft was dramatically demonstrated.

Atlantic Aviation, genial Bob Ward hosting, supplied a remarkably sumptuous spread for the assembled multi-

tude at the buffet luncheon. So much so that many lingered even after the start of the "fly-by." The servicing and ramp escort job done by Atlantic's crew deserves special commendation and reflects the quality of their routine transient and fixed base services.

Oakland Airmotive's Centaurus' pass over the field on "fly-by" brought the late lunchers hurrying out of the big hangar and the show was on. This and the Super-V twin conversion of the Bonanza make an attractive package to

offer the corporate aircraft market. Many persons saw their curiosities about the Fairchild F-27 satisfied at the big high-wing turbo-prop job rotated through takeoff attitude in surprisingly short run and held the climb until well past the airport boundary. In the run, the familiar Dart engine sound reminded the crowd of the remarkable record these engines have run up on worldwide use of the Viscounts.

To break up the pattern, the next demonstration was that of Hiller's new brilliant performer, the 12E helicopter. Rather than breathtaking speed, the ease and agility of this machine, powered by the new 305 hp Lycoming, suggested a freedom of movement unparalleled by any other mode of transportation.

This was then alternated again by the swift, almost knife-like slice of the Cessna 310B across the ramp. At a reported 200 mph, its loafing appearance almost belied the figure. Obviously, it wasn't straining.

The Republic Alouette (turbine powered) made an almost comparable speed run-by not usually associated with the type and evidenced the advantages of the weight-power combination of the turbine engine.

Aero Design put three models of their Commander in the air, led by the Alti-Cruiser and made a pretty formation pass that evoked compliments on all sides.

Beech countered with their import the startling MS 760 4-place jet owned by Henry H. Timken, Jr., NBAA member, which literally "swept" the ramp at a reported 400 mph.

Omega Helicopters made a very practical and down-to-earth show of their machine picking up and delivering an obviously very heavy, large American Airlines "Paul Bunyan" cargo box and carrying it well within the center area of the 'copter.

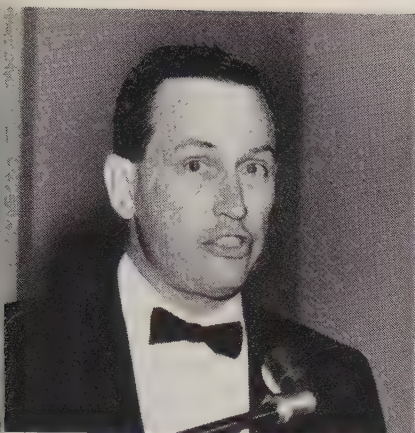
Piper "family of personal business aircraft" put the sleek, racy-looking (and performing) Comanche and the familiar, well-loved Apache into the air while the Tri-Pacer was more than adequately displayed by the dozen or more that taxied in and out, took off or landed as ordinary, everyday business pilots went about their business almost oblivious to the events around them.

In fact a great deal of credit was due to the unusually skillful handling of the mixture of the normally heavy terminal airport traffic and the rigidly adhered to time schedule of the Civil Air Parade. All concerned joined in the accolades to Chief Air Traffic Controller Leo Marshall and his top-notch CAA boys in the tower.

Bell Helicopter family was there, also, quietly serving on the downtown-to-airport airlift, a subtle and most convincing demonstration of their utility. One was sold during the convention to a Pennsylvania coal mine operator we were advised.

It was unfortunate that the schedule

(Continued on page 56)



The New Role of CAB

A Digest of Address By The Hon. Louis J. Hector, CAB
(NBAA Honors Night Banquet)

Because all of you are interested in aviation, and because you are businessmen, I need not dwell on our mutual interest in aviation. Although I am an attorney, I have spent a number of years running a business and I have tried to use that experience as a Member of the Civil Aeronautics Board. I feel very strongly that civil aviation . . . is also a business. While civil aviation must always be regulated both in safety and in economic matters in the general public interest, it must also be provided with a regulatory climate which will permit the free play of the forces of free competitive enterprise.

I was at one time called on to take over a client corporation and effect a refinancing. The business was scattered all over South Florida, and I found that as I traveled around on commercial airlines I would often see planes parked at airports bearing the name of such and such a paper company, such and such a timber company, etc. It didn't take me long to feel that our company could make good use of our own plane. But I had to persuade my Board of Directors of that, and just about the time I had them completely sold, the refinancing was complete and I went back to practicing law. I lost my chance to experience personally the great benefits of private business aviation.

The business aircraft of America come under the jurisdiction of the Civil Aeronautics Board solely on safety matters. Technically speaking, you are not subject to the economic regulatory powers of the Board, though as a matter of fact, some of you operate fleets quite comparable to a small air carrier and in terms of total gross poundage you probably represent the largest fleet of civil aircraft in the world. Even in safety matters, however, your economic problems have been of constant concern to the Board. Safety regulation does not occur in an economic vacuum.

The new Federal Aviation Agency is one of the great milestones in American aviation, but unfortunately, when any big change occurs in the Federal government, everyone seems to concentrate on the areas of disagreement, and the smoke of controversy which these disagreements generate many times obscures a large measure of almost unanimous agreement, at least 90

percent of the proposals.

By the time the hearings were over, almost everyone concerned with aviation was agreed on a number of basic points:

First, that air traffic control is a seamless web. It cannot be accomplished by a number of different agencies. The only way the job can be done properly is by one agency under one head.

Second, that this was an enormous job. It will require a very big agency which will inevitably have large numbers of personnel, a vast network of equipment, and a very large budget. The new agency will be one of the most substantial and important in the Federal government. It is appropriate that the head of such an agency report directly to the President.

Third, this new agency must be responsible for unifying military and civilian air traffic control and aviation facilities planning. It was clear that we could not have two independent, parallel systems. Not only would such systems inevitably develop conflicts, but the cost would be prohibitive. Of course, in time of national emergency, everyone recognized that the military must take over and run the system in the interest of national defense. But during peacetime a joint civil-military agency must run a common system for the benefit of both military and civilian interests.

Fourth, the air traffic control research function and the operating function must be unified. The rapidly developing technology in communications, navigation aids, data processing as well as in aircraft design, and the tremendous growth in the number of planes using our airspace means that the technique of air traffic control can never stand still.

There were a few areas of disagreement which occupied much time and study. So far as the CAB was concerned there were two—the responsibility for making safety regulations and the responsibility for conducting accident investigations.

In the past, rule-making has been the responsibility of the CAB. These regulations, however, were usually of a general basic character. The Board had delegated many matters of detail to the

CAA. We cooperated in the regulatory job. The Board and the CAA under Jim Pyle worked together in about as successful a manner as I have ever seen achieved by two government agencies.

As to accident investigation, the Board also has had the basic responsibility. It has been our job to determine probable cause so that such accidents can be prevented in the future. Out of the investigations have come new traffic rules, new training requirements, new piloting techniques, radical changes in planes, their instruments and equipment, and many other changes which have made aviation safer. The Board delegated to the CAA the duty of investigating accidents of aircraft weighing less than 12,500 pounds which means, in effect, anything smaller than a Grumman Mallard.

The disagreement over these responsibilities can be stated very simply. The proponents of the new FAA felt that they should be transferred to the new agency. The CAB felt that the rule-making job was quasi-legislative; that the interests of all parties, military, commercial and private, must be carefully weighed after hearings and full deliberation by a multi-member agency. It was our feeling that no safety rule could be promulgated without consideration of its economic impact, and that the Board was in the best position to make judgment of this type.

We felt that accident investigations should always be conducted by a multi-member body rather than by an agency with a single head, and that to be *impartial*, such an agency should not operate any large number of planes, manage any substantial system of aeronautical facilities, or have any vested interest in any particular aspect of aviation.

The arguments on behalf of giving both powers to the new Federal Agency, however, were also sound and persuasive. It was felt that the formulation of the rules and the operation of the system must go hand-in-hand. Similarly, it was felt that it is a waste of time to promulgate regulations unless the technology and production capability is available to implement them.

As to accidents, the new agency would have personnel and facilities all

(Continued on page 49)



"MILLION-MILER" PILOTS show proud expressions on receiving their awards. All recipients were not present, but complete list is below.

1958 NBAA Annual Safety Awards

Last year, NBAA presented 43 pilots with the "Million-Miler" safety awards, 88 with the 500,000 mile awards and 42 companies received Company safety awards.

Gerard J. Eger, Chairman, NBAA Awards Committee and Corporate Secretary of International Harvester Co., Chicago, Ill., states NBAA's objectives:

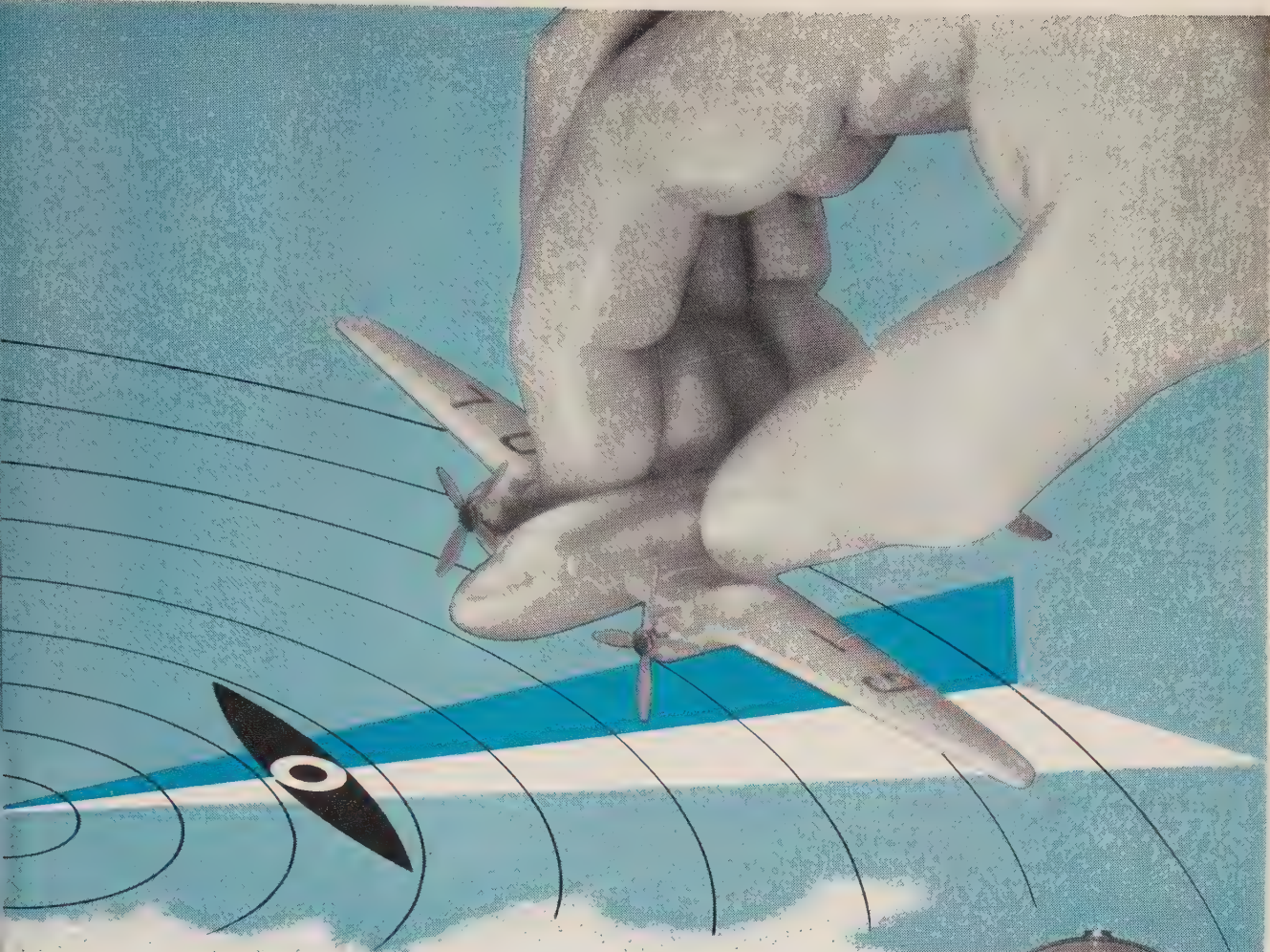
1. To focus public attention on the remarkable safety records being established by business organizations operating their own aircraft, and
2. To call even greater attention to the tremendous growth of business flying throughout the United States.

Mr. Eger adds, "Rules and regulations for the selection of NBAA Award recipients are rigid. They are based on the accident reporting standards established by the American Standards Association and by the National Safety Council."

RECIPIENTS NBAA MEMBER-PILOT "MILLION MILER" SAFETY AWARDS

1,000,000 or More Accident and Injury Free Miles Flown in Business Aircraft

- | | | |
|---|--|---|
| 1. H. R. Anderson , Chrysler Corp., Detroit, Mich. 1,168,000 | 8. *Harold Curtis , National Distillers & Chemical Corp., New York, N. Y. 1,200,000 | 17. *C. M. Hayes , Traylor Brothers, Inc., Evansville, Ind. 1,290,000 |
| 2. John A. Bouteller, Jr. , Service Pipe Line Co., Tulsa, Okla. 1,228,309 | 9. *Alfred E. Custer , Northern Natural Gas Co., Omaha, Neb. 1,029,000 | 18. G. L. Hobbs , Beloit Iron Works, Beloit, Wisc. 1,116,000 |
| 3. Joseph J. Budro, Jr. , Champion Paper and Fibre Co., Hamilton, O. 1,327,737 | 10. W. R. Dotter , International Harvester Co., Chicago, Ill. 1,256,137 | 19. William P. Hobson , Hercules Powder Co., Wilmington, Dela. 1,337,989 |
| 4. Raoul Castro , International Harvester Co., Chicago, Ill. 1,337,486 | 11. John R. Dunham , Continental Can Co., Inc., Morristown, N. J. 1,468,750 | 20. *W. G. Jennings , AiResearch Aviation Service Co., Los Angeles, Calif. 1,700,000 |
| 5. *M. P. "Bud" Clark, Jr. , National Distillers & Chemical Corp., New York, N. Y. 1,012,500 | 12. *Ray E. Goodwin , Wesley West Industries, Houston, Tex. 1,108,000 | 21. James E. Kidd , Anchor Hocking Glass Corp., Lancaster, O. 1,244,600 |
| 6. L. P. Cornwall , Chrysler Corp., Detroit, Mich. 1,281,600 | 13. *James M. Grogan , Pillsbury Mills, Inc., Minneapolis, Minn. 1,085,000 | 22. A. C. Korb , Westinghouse Electric, Pittsburgh, Pa. 1,200,000 |
| 7. *Robert R. Cummins , Grimes Mfg. Co., Urbana, O. 1,002,510 | 14. James G. Guess , Burlington Industries, Inc., Greensboro, N. C. 1,076,389 | 23. Lawrence N. Lacey , Triangle Conduit & Cable Co., Inc., New Brunswick, N. J. 1,776,000 |
| | 15. B. N. Haddock , Falstaff Brewing Corp., St. Louis, Mo. 1,108,297 | 24. *Irving Laframboise , Wolfe Industries (Aviation), Columbus, O. 1,018,112 |
| | 16. Robert L. Hansen , Kroehler Mfg. Co., Naperville, Ill. 1,292,500 | 25. J. Sheldon Lewis , Thatcher Glass Mfg. Co., Elmira, N. Y. 1,431,250 |



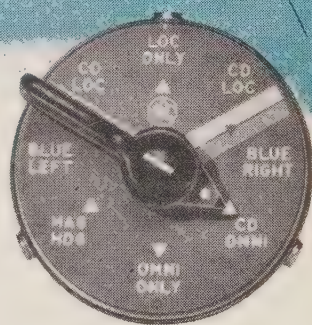
Directs You to Your Course . . . and Keeps You on it

ARC'S CD-1 COURSE DIRECTOR, TEAMED WITH TYPE 15 OMNI RECEIVERS

To be sure of the exact headings required to intercept and fly any desired VOR radial or runway localizer, pilots no longer need perform exacting mental calculations. ARC's Course Director (CD-1), teamed with single or dual omnirange receivers, relieves the pilot of many problems — does most of his work . . . tells him when he is flying right. No more worries over bracketing or missed approaches.

Simply select the desired VOR or localizer station, set the course director to the bearing of the selected track and turn the aircraft until the vertical needle of the cross-pointer is centered — then steer to keep the needle centered. The aircraft will intercept the right track and follow it. Wind drift is no problem, as the instrument compensates for this automatically.

Here is precision flying . . . simplified navigation, engineered and built to perform dependably. Ask your dealer to install the ARC CD-1, along with a dual installation of ARC's Type 15-E VOR equipment. They work as a team for safer flying.



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OMNI/LOC RECEIVERS • MINIATURIZED AUTOMATIC DIRECTION FINDERS • COURSE DIRECTORS • LF RECEIVERS AND LOOP DIRECTION FINDERS
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Circle No. 15 on Reader Service Card





PILOT SAFETY AWARDS luncheon saw *Ralph E. Piper, retiring Board member, preside. Ned H. Dearborn, Pres., Nat'l Safety Council, spoke.*

26. Edwin C. Little , Westinghouse Electric Corp., Pittsburgh, Pa.	1,180,000
27. C. J. Lund , International Paper Co., Mobile, Ala.	1,310,635
28. *Ernest G. Marquis , Cluett, Peabody & Co., Inc., White Plains, N. Y.	1,180,000
29. B. Owen Mayfield , Hercules Powder Co., Wilmington, Dela.	1,547,309
30. *L. L. McMillon , H. C. Price Co., Bartlesville, Okla.	1,094,090
31. S. A. Merrill , Goodyear Tire & Rubber Co., Inc., Akron, O.	1,659,000
32. George E. Meyers , Monsanto Chemical Co., St. Louis, Mo.	1,349,963
33. Norman L. Mitchell , Minneapolis Star & Tribune, Minneapolis, Minn.	1,341,725
34. *Morris J. Morgan , Texas Eastern Transmission Corp., Shreveport, La.	1,103,200
35. Raymond H. Murphey , Service Pipe Line Co., Tulsa, Okla.	1,098,544
36. *Carroll B. Nichols , Service Pipe Line Co., Tulsa, Okla.	1,016,688
37. *Myron L. Nicholson , Mine Safety Appliances Co., Pittsburgh, Pa.	1,068,800
38. *Guy H. Owen, Jr. , Texas Eastern Transmission Corp., Shreveport, La.	1,056,610
39. *Walter C. Pague , ARMCO Steel Corp., Middletown, O.	1,065,490
40. *Roger Eugene Parrott , Fuller Brush Co., Hartford, Conn.	1,084,100
41. Ralph E. Piper , Monsanto Chemical Co., St. Louis, Mo.	1,276,600
42. *C. W. Reeder , Goodyear Tire & Rubber Co., Inc., Akron, O.	1,014,300

43. *James M. Richter , Columbia-Geneva Steel Div., U. S. Steel Corp., San Francisco, Calif.	1,004,864
44. *A. K. Roden , Bechtel Corp., San Francisco, Calif.	1,232,531
45. Nelson U. Rokes , Procter & Gamble Co., Cincinnati, O.	3,175,090
46. *Sam E. Safris , Butler Co., Chicago, Ill.	1,110,000
47. J. R. Seidner , Goodyear Tire & Rubber Co., Akron, O.	2,118,510
48. George W. Sherwood , Briggs Mfg. Co., Warren, Mich.	1,418,940
49. Orville E. Sparks , Holley Carburetor Co., Van Dyke, Mich.	1,318,931
50. *Aaron E. Spotswood , Monsanto Chemical Co., St. Louis, Mo.	1,033,870
51. Don M. Teel , U. S. Steel Corp., New York, N. Y.	1,046,625
52. Richard N. Thurston , Monsanto Chemical Co., St. Louis, Mo.	1,373,551
53. Philip Van Treuren , Dairypak Inc., Cleveland, O.	1,202,075
54. *William B. Watt , Hoover Co., North Canton, O.	1,125,900
55. *Howard H. Wentzel , Fairchild Aircraft Div., Hagerstown, Md.	1,160,000

TOTAL

69,864,107

*For First Time Awarded.

RECIPIENTS NBAA MEMBER-PILOT SAFETY AWARDS

500,000 or More Accident and Injury Free Miles Flown in Business Aircraft

1. Wilbur D. Adams , Procter & Gamble Distributing Co., Cincinnati, O.	962,350
2. Howard E. Ahrns , Ohio Oil Co., Findlay, O.	978,870
3. *William H. Allen , Ray-O-Vac Co., Madison, Wisc.	561,362
4. Warren E. Ames , Hercules Powder Co., Wilmington, Dela.	706,330
5. William F. Austin , Lukens Steel Co., Coatesville, Pa.	809,793
6. *Harry J. Bailey , General Precision Laboratory Inc., Pleasantville, N. Y.	759,600
7. Ridgway Baker , Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.	636,900
8. James M. Banker , ARMCO Steel Corp., Middletown, O.	873,000
9. *Ralph M. Barron , Chrysler Corp., Detroit, Mich.	865,000
10. Earle W. Bauer , Ohio Oil Co., Findlay, O.	789,604
11. *John I. Belmeyer , Gardner-Denver Co., Quincy, Ill.	508,920
12. *James E. Boyd , Shamrock Oil and Gas Corp., Amarillo, Tex.	521,430
13. *William R. Brand , James S. Harrison, Wichita Falls, Tex.	548,200
14. *R. L. Bushbaum , S. J. Groves & Sons Co., Minneapolis, Minn.	661,233

15. Kenneth G. Colthorpe , Champion Spark Plug Co., Toledo, O.	640,410
16. *John C. Cooney , Sangamo Electric Co., Springfield, Ill.	520,498
17. *Ben J. Cumnock , Dallas Airmotive, Inc., Dallas, Tex.	697,000
18. *Edward F. Dietzel , Gillete Co., Boston, Mass.	504,000
19. *Frank Dolinski , Aerojet-General Corp., Azusa, Calif.	515,000
20. *Austin J. Gould , Sinclair Refining Co., Tulsa, Okla.	522,950
21. *Leonard M. Greene , Safe Flight Instrument Corp., White Plains, N. Y.	511,500
22. *Henry D. Gregory , Gulf Oil Corp., Dravosburg, Pa.	600,000
23. George M. Guthrie , Southern Natural Gas Co., Birmingham, Ala.	600,668
24. James C. Hamilton , Ford Motor Co., Dearborn, Mich.	730,740
25. Calvin C. Hardy , Southern Natural Gas Co., Birmingham, Ala.	583,657
26. *John D. Hardy , Texas Eastern Transmission Corp., Shreveport, La.	703,575
27. *Rex Hardy, Jr. , Lockheed Aircraft Corp., Missiles Systems Div., Sunnyvale, Calif.	585,000
28. *Charles F. Harmon, Jr. , Lockport Felt Co., Newfane, N. Y.	645,750
29. *Earl F. Hartman , Goodyear Tire & Rubber Co., Akron, O.	532,000

30. Robert F. Hinds , Chemstrand Corp., Decatur, Ala.	696,780
31. *Paul C. Holst , Michigan Tool Co., Detroit, Mich.	840,000
32. Kenneth F. Horton , Sinclair Refining Co., Tulsa, Okla.	901,440
33. *Louis T. Houck , Sinclair Refining Co., Tulsa, Okla.	554,800
34. D. William Hubbard , Tobin Map Co., Inc., San Antonio, Tex.	737,020
35. Wilmer A. Ivey , Southern Natural Gas Co., Birmingham, Ala.	892,700
36. Albert L. Jones , U. S. Steel Corp., New York, N. Y.	807,970
37. *Paul E. Jones , Shell Oil Co., New York, N. Y.	523,680
38. *William L. Kempp , Holley Carburetor Co., Detroit, Mich.	660,620
39. *Manuel R. Kenwood , Northern Natural Gas Co., Omaha, Neb.	675,000
40. Charles S. Kincaid , Service Pipe Line Co., Tulsa, Okla.	969,820
41. Clayton R. Kinney , Burlington Industries, Inc., Greensboro, N. C.	782,020
42. John A. Korver , Ford Motor Co., Dearborn, Mich.	695,400
43. Joseph L. Lacey , Sinclair Refining Co., Tulsa, Okla.	830,000
44. Arthur Lippa, Jr. , U. S. Steel Corp., New York, N. Y.	783,140
45. Melvin C. Lora , Ohio Oil Co., Findlay, O.	977,290

5. Glenn C. Lowe , Ohio Oil Co., Findlay, O.	671,890	63. *Jack B. Prior , Heussler Aviation, Buffalo, N. Y.	874,800	79. Karl F. Styne , Noland Co., Inc., Newport News, Va.	960,460
7. John H. Luchow , Procter & Gamble Distributing Co., Cincinnati, O.	670,320	64. John E. Powers , International Business Machines Corp., Poughkeepsie, N. Y.	835,200	80. *Howard W. Taber , Service Pipe Line Co., Tulsa, Okla.	561,600
3. James C. Magnus , Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.	610,555	65. Alton L. Rainwater , Service Pipe Line Co., Tulsa, Okla.	916,615	81. *Everett J. Taylor , Garner Advertising Co., St. Louis, Mo.	511,520
9. *Gordon Malzer , Sinclair Refining Co., Tulsa, Okla.	630,400	66. Roosevelt Rammel , Ohio Oil Co., Findlay, O.	756,755	82. *John L. Trace , Owens-Illinois Glass Co., Toledo, O.	504,000
0. *Royce R. Mansfield , Aerojet-General Corp., Azusa, Calif.	534,915	67. Richard R. Rigg , Owens-Illinois Glass Co., Toledo, O.	902,350	83. W. F. Underwood , Sinclair Refining Co., Tulsa, Okla.	953,305
1. Russell A. McArdle , Service Pipe Line Co., Tulsa.	755,843	68. *Ernest Ruckl , Northern Natural Gas Co., Omaha, Neb.	880,000	84. William R. Verran , Ohio Oil Co., Findlay, O.	600,995
2. Marshall McDowell , Gerstenslager Co., Wooster, O.	620,612	69. Herbert L. Sefton , Ohio Oil Co., Findlay, O.	765,960	85. *Victor F. Voit , Bechtel Corp., San Francisco, Calif.	940,738
3. Samuel H. Massey , Hercules Powder Co., Wilmington, Dela.	719,590	70. Donnell E. Severts , Service Pipe Line Co., Tulsa, Okla.	673,573	86. James D. Wallace , Procter & Gamble Distributing Co., Cincinnati, O.	753,160
4. Thomas R. McFarland , Ohio Oil Co., Findlay, O.	665,115	71. *B. B. Sherrill , Shell Oil Co., New York, N. Y.	802,230	87. Hubert L. Wells , Sinclair Refining Co., Tulsa, Okla.	673,459
5. Allen F. Minich , Sinclair Refining Co., Tulsa, Okla.	680,000	72. George H. Shortlidge , U. S. Steel Corp., New York, N. Y.	758,060	88. *Mervyn G. Wenzel , Pesco Products Div. Borg-Warner Corp., Cleveland, O.	850,000
5. *John M. Morgan , Mrs. R. R. M. Carpenter, Wilmington, Dela.	540,000	73. Martin J. Smith , Dairy-pak, Inc., Cleveland, O.	530,400	89. *Donald Westfall , Aeroquip Corp., Jackson, Mich.	585,000
7. *Maurice D. Mosher , Hercules Powder Co., Wilmington, Dela.	504,659	74. Stanley C. Smith , New York Wire Cloth Co., York, Pa.	675,000	90. Richard C. Whitbeck , Owens-Illinois Glass Co., Toledo, O.	753,440
3. *Robert J. Nagel , Westinghouse Electric Corp., Pittsburgh, Pa.	589,250	75. *Thomas W. Smith , Shamrock Oil and Gas Corp., Amarillo, Tex.	978,225	91. *Leon W. Winkes , Ohio Oil Co., Findlay, O.	510,840
9. *Harry J. Nystrom , General Mills, Inc., Minneapolis, Minn.	785,600	76. *Alan R. Sparrowhawk , Sinclair Refining Co., Tulsa, Okla.	515,640	92. James M. Wolfe , Service Pipe Line Co., Tulsa, Okla.	674,832
0. Dale B. Olsen , Aurora Gasoline Co., Detroit, Mich.	734,535	77. Edward L. Springer , Service Pipe Line Co., Tulsa.	793,735	93. Horace E. Wood , Gillette Co., Boston, Mass.	638,000
1. Donald E. Phillips , Ohio Oil Co., Findlay, O.	936,925	78. *William G. Stone , General Mills, Inc., Minneapolis, Minn.	594,000	94. Paul E. Wynn , Service Pipe Line Co., Tulsa, Okla.	733,498
2. Forest Bob Polston , Sinclair Refining Co., Tulsa.	613,400			95. Richard A. Yoakam , Ohio Oil Co., Findlay, O.	795,100
				TOTAL	66,919,146

RECIPIENTS NBAA MEMBER MERITORIOUS SAFETY AWARDS

1,000,000 or More Accident and Injury Free Miles Flown in Business

Aircraft

1. *Aerojet-General Corp., Azusa, Calif.	1,213,450	19. International Harvester Co., Chicago, Ill.	2,692,630	35. *Sangamo Electric Co., Springfield, Ill.	1,254,830
2. Anchor Hocking Glass Corp. Lancaster, O.	1,850,000	20. International Paper Co., Mobile, Ala.	2,865,539	36. *Service Pipe Line Co., Tulsa, Okla.	2,055,255
3. ARMCO Steel Corp., Middletown, O.	1,970,747	21. *Michigan Tool Co., Detroit, Mich.	1,300,000	37. *Shamrock Oil and Gas Corp., Amarillo, Tex.	1,002,510
*Bechtel Corp., San Francisco, Calif.	2,727,583	22. Mine Safety Appliances Co., Pittsburgh, Pa.	2,064,200	38. *Shell Oil Co., New York, N. Y.	1,145,339
*Champion Spark Plug Co., Toledo, O.	1,285,172	23. Minneapolis - Honeywell Regulator Co., Minneapolis, Minn.	1,954,550	39. *Sperry Gyroscope Co., Great Neck, L. I., N. Y.	5,400,000
*Dairypak Inc., Olmsted Falls, O.	1,067,864	24. Minnesota Mining And Mfg. Co., St. Paul, Minn.	2,288,888	40. *Sprague Electric Co., North Adams, Mass.	1,904,332
*Fairchild Engine & Airplane, Hagerstown, Md.	1,534,600	25. Monsanto Chemical Co., St. Louis, Mo.	5,435,471	41. Texas Eastern Transmission Corp., Shreveport, La.	2,742,337
3. Falstaff Brewing Corp., St. Louis, Mo.	1,108,297	26. Noland Co., Inc., Newport News, Va.	1,202,000	42. Texas Gas Transmission Corp., Owensboro, Ky.	1,673,500
0. Ford Motor Co., Dearborn.	3,792,782	27. Northern Natural Gas Co., Omaha, Neb.	3,035,531	43. *Traylor Bros. Inc., Evansville, Ind.	1,080,000
*Fuller Brush Co., Hartford, Conn.	1,284,750	28. Owens-Illinois Glass Co., Toledo, O.	2,825,649	44. *Triangle Conduit & Cable Co., Inc., New Brunswick, N. J.	1,686,000
1. *General Mills, Inc., Minneapolis, Minn.	1,484,460	29. *Petrolite Corp., St. Louis, Mo.	2,345,735	45. Westinghouse Electric Corp., Pittsburgh, Pa.	2,100,000
2. *General Precision Laboratory, Pleasantville, N. Y.	1,519,210	30. Phillips Drilling Corp., San Antonio, Tex.	1,581,358	46. *Whirlpool Corp., St. Joseph, Mich.	1,300,399
*Gillette Co., Boston, Mass.	1,142,000	31. *H. C. Price Co., Bartlesville, Okla.	2,293,390	47. *Wolfe Industries (Aviation), Columbus, O.	1,018,112
4. Goodyear Tire & Rubber Co., Akron, O.	5,324,100	32. Procter & Gamble Distributing Co., Cincinnati, O.	2,561,390		
5. S. J. Groves & Sons Co., Minneapolis, Minn.	1,416,877			TOTAL	96,607,013
5. Hercules Powder Co., Wilmington, Dela.	2,752,645			*For First Time Awarded.	

*For First Time Awarded.

NBAA ELEVENTH ANNUAL MEETING, PHILADELPHIA



"... airframes and power plants, accessories, electronics and instruments down to nuts and bolts, the supply lines for industry's wings are open. Fixed base operators, overhaul shops and repair stations are part of the armada of business aircraft suppliers!"

58—Representative Exhibitors in Photo Montage



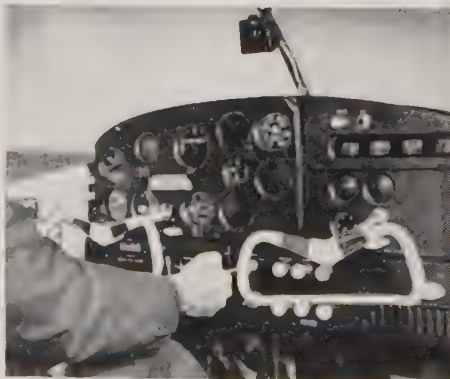


BIG NEW CESSNA 172 WITH NEW STREAMLIN

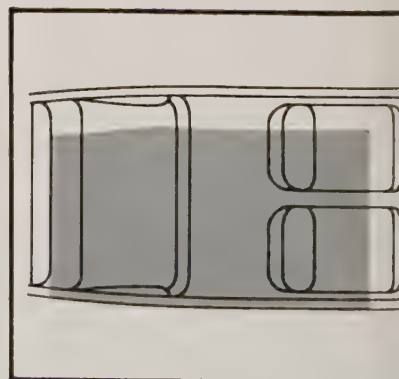
What an airplane! It's the big new Cessna 172...largest in its class...with all-metal construction...exclusive Land-O-Matic and Para-Lift...high performance...and clean aerodynamic design—now more streamlined than ever before! See that sleek new cowling? That's just one of many new developments in this great new Cessna.

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NEWLY DESIGNED, SHOCK-MOUNTED PANEL—with all flight instruments located directly in front of you. Easy to read, easy to understand—probably with fewer items requiring attention than in your car! Safety control lock is standard. Ample room for full-gyro panel and optional navigational instruments.



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SIGN AND FLIGHT-LINE STYLING FOR 1959

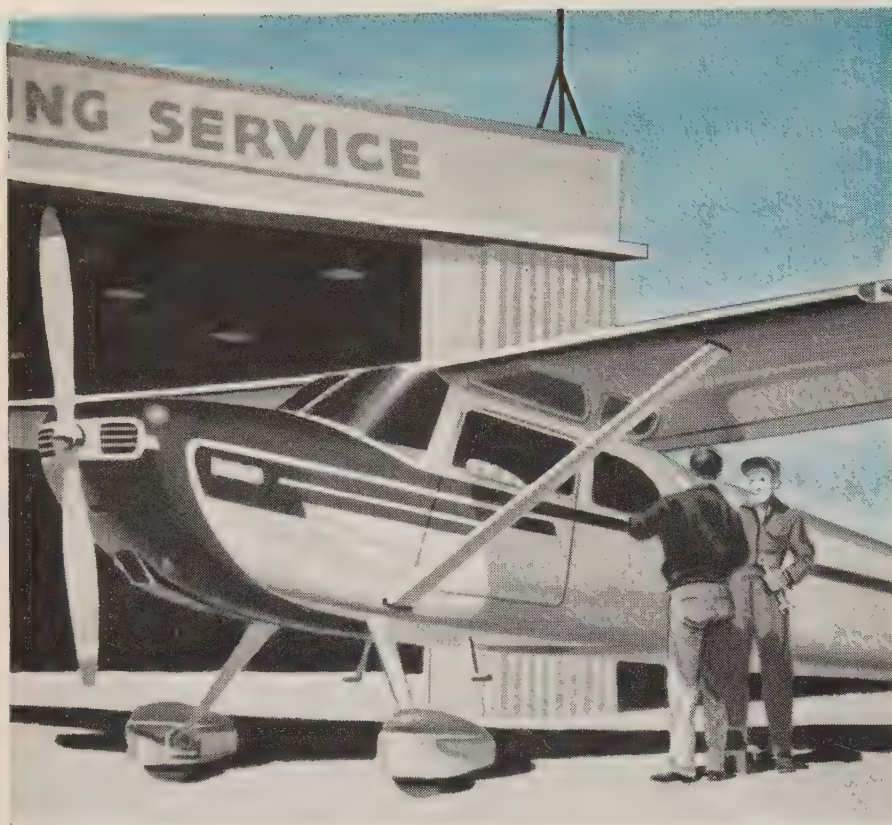


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non-stop endurance world record. Cessna's High-Stability Wing
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broad-shouldered styling to match this Cessna's high-
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Circle No. 17 on Reader Service Card

Revival and Passage of Aid to Airports Bill A Must

(Continued from page 19)

tary and the airlines. We assured civilian control of the airspace and that there would be no freeze-out of air navigation aids, that would hamper the dynamic expansion of private and business flying. There is more to be gained for all aviation than to worry over domination. Congress will police the act.

"We've just broken ground—we're climbing out. All will depend on the type of Administrator and his over-all viewpoint. We meant what we said in the preamble about the freedom of use of all the navigable airspace! We have a good blueprint—it depends a lot on the skill now of the carpenter who put it together.

"We intend to see to it that the 5-year plan for weather aviation services is not only programmed but carried out. With funds! This is one way Congress can show appreciation of the great national importance, both military and economic, of general aviation. 88,000 civil aircraft are dependent upon Weather Bureau services.

"About airports. It is useless to improve safety conditions in the air and not have space on the ground for safe landings. The FAA bill was good, passed Senate unanimously and House with only 1 or 2 votes against it. The jet age demands more than horse and buggy or DC-3 airports. If we can spend five billion for a national interstate highway system, we can afford \$100 million a year for next five years to modernize our national airport system.

"The aviation industry pays in gasoline and oil taxes alone, almost enough to finance the government's 50-50 matching formula for the program. Within a year or two, increased aviation usage will bring in more than the government's matching share.

"A national airport program is not the sole responsibility of the municipality or state since well over half of its use will be directly in inter-state commerce. Further, to ensure that these airports meet Federal safety standards there must be matching funds or we will have little right to dictate what type of airports they should build, or to insist on clear-zones and ban obstructions.

"I will re-introduce the bill on the opening day of Congress. It will provide . . . (also) for an emergency fund or another \$75 million to be used as discretionary fund for speeding up improvements, without regard for the state allocation formula.

"I am sure that the Congress will add this sum which was stricken from the same bill in the House, because we have lost six months of valuable time while the situation has become more dangerous every day. Early enactment by the new Congress of the Federal Aid to Airports Act is a must for air safety!"

GREENHOUSE PATTERN

By Torch Lewis

Even the gulls wuz walkin around mira on Sunday, September 21st, that's more they wuz talkin to themselves. So several of us copped the titler to Newark, Pennsied to PHL and stepped out under the dripping arquee of the Stratford just in time to see the smiling face of Editor Henry ing whisked away for a sturgeon sandwich (at Bookbinder's yet?—Ed.) Having spent a full day in transit, 99% of it on the rails, a dollop of corn squeezins held considerable more attraction than a smidgeon of scrapple. I gave Editor Henry my Horn and Bardart credit card and flang into the lobby. Therein looking just as dry and fur as I felt were Chuck O'Connor (JLB), Tills Peabody (GM), Dick Egg (Owens-Ill.), Otto Pobanz (Fed. Stores), Ed Binder (P.E.A.), Scotty Miller (AiResearch) and a host of others. With this assemblage just lobbing it seemed trite to inquire as to whether or not the grog shop was in play, so I checked in, freshened up and alluwa sudden it was much later.

Probably in no meeting heretofore as the purveyor of aircraft and accessories had such a chance to display wares to such advantage. Actually the proximity of the booths to the main meeting auditorium worked to the detriment of the business meetings rather than to their advantage. The noise was distracting both to lecturer and listener and much was missed because of this factor.

The serious highlight of the meeting was the keynote speech of Senator Mike S. Monroney. Here at last is a highly placed man in government who is not only a forthright champion of aviation in general but also knows what he is talking about. I confess to open, mint-blank admiration for this distinguished Senator from Oklahoma. I either confess to the mistaken impression that the overage Oklahoman was of his depth if the conversation touched other than plowshares, oil leases and the Oklahoma Sooners. The country in general and aviation in particular could use a few more like Henry Eggess and Mike S. Monroney.

Nowhere have I seen such out and out larceny perpetrated as Beech did with their sputnik balloons. Hands down, the highlight of the funny business, the balloons did much to liven the usual dull business of a ballroom dancer. For those of you who missed, the balloons were projectile type which emitted a razz in orbit and were snatched by the hundreds at dinner. Wednesday dawned warm and pretty promising a really outstanding preview of all the newest aircraft offered the Business Aircraft fleet. Everything from Bell's new infuriated palm to Lockheed's +500 MPH Jetstar. Everyone wound up at the big Wednesday night blast and if your cup wasn't overflowing when you left wearily for home it's only because you weren't here, Charlie!

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By far the most powerful helicopter in its class. Suddenly, the Hiller 12 E has made light utility helicopter service more practical and economical than ever before. The reason is power. More usable power than any helicopter of its size has ever been able to harness. The result is more payload per hour—more payload per dollar! The result, too, is versatility, the ability to take on the toughest assignments industry and commerce can give it. And to be ready with on-call availability.

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WORLD'S FIRST JET SIMULATOR FOR CIVIL USE in training flight crews in operation at United Air Lines training center at Denver. Realism is achieved by providing pilot vision through closed-circuit television. A replica of an airport is projected on a screen in front of the cockpit for simulated landings and take-offs. The picture changes in relation to speed, height and attitude as "flown" by the trainee crew.

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"Touchdown" Glide Slope Research Continues

Many factors bear on the problem of reducing landing minimums—terrain clearance standards, primary approach radio aids, transition aids (from IFR to visual) and others. Some of these are not resolvable except by expenditure of large sums of money for the removal of obstructions in the approach path that violate safety criteria and sometimes purchase of additional property if possible. Or the installation of whole new and more finite approach-guidance systems and threshold or

runway marking systems at added cost.

Much of this is so because, with exceptions, it is generally considered unsafe to make full use of the present ILS systems down to the runway in so-called "zero-zero" landings. Actually, some civil landings are being made under conditions that have found the aircraft unable to make its way from runway to ramp without external assistance.

But to convert this capability to follow a runway localizer down to touchdown to everyday, customary and legal practice requires an improvement of the glide slope projection. The "null reference" type requires that a pilot

have visual orientation with the runway significantly in advance of touchdown to effect an acceptable routine landing at a point along the runway within stopping requirements.

In 1957, the CAA asked a team of Ohio State University engineers to initiate research on this problem. Simultaneously, other developments in more accurate altitude measuring methods close to the ground were continued. Mr. Richard H. McFarland, antenna laboratory research associate in charge of the project, advises that the new system will be usable up to five miles out from the runway site and provide safe, reliable guidance all the way to the ground.

The antenna consists of trough-shaped arrays filled with sodium-chloride (common salt), placed flush with the ground 160 feet apart and aligned lengthwise with respect to the runway. A minimum of two are required to project a glide slope, but it is said that operational installations to begin soon at major terminals will employ six troughs.

VHF Monitoring At Home Or Office A Valuable Practice

A rapidly growing trend may go a long way towards easing several operational problems of both the airway system itself and the users. This is increasing availability and purchase of VHF aeronautical band receivers for home or office.

Whether at a downtown office or a port office of any firm using business aircraft, a major operational problem is obtaining sufficient weather and other information to forecast flight probability in advance of arrival at the end of the runway. The ideal situation would be prompt, easy access to the weather forecaster or observer and an open line to the Air Route Traffic Control Center.

The former, although theoretically possible, has at many airports, been virtually eliminated. And from home,



Harron Labs.

A VHF radio receiver, AIR-COM, designed to monitor calls within the 118-127 mc range, is offered by Harron Labs. of Bayside, N. Y. This receiver requires no installation, operates on 110 volts ac/dc, and can be used at home or office or airport. The receiver contains seven tubes plus a selenium rectifier, is drift-free and will receive reliably a line of sight transmissions. Inexperienced personnel can learn commercial and traffic techniques used by professionals by listening as much and as frequently as desired. For interested personnel, information can be obtained of operational status of possible delays, instantaneous airport and enroute weather conditions, by monitoring busy ATC channels. Many an unnecessary wait at the airport for an ATC delay can be converted into useful business time at the office for busy executive passengers.

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office, telephone contact has now become almost impossible.

The latter situation, querying ATC for probable delay information, is impracticable for obvious reasons of additional workload on already-harassed controllers. Yet it is vitally necessary today to have some evaluation of the traffic picture for flight planning purposes. It is futile and bad to flight plan into Washington for instance, climb aboard with your passengers, taxi out on a sweltering day and learn that you will have a lengthy delay on your filed route, maybe have to add gas for the only available alternate route. Or maybe, be advised that "DCA is accepting no new traffic for an hour and a half!"

If you can't beat this game, you can at least take it into consideration by a little preparatory monitoring of ATC frequencies from home, office or even the non-terminal airport of departure. Any professional pilot can easily determine very quickly the ATC band which is going to affect his operation and can often interpret this valuable information for time-pressed businessmen passengers prior to departure or the airport.

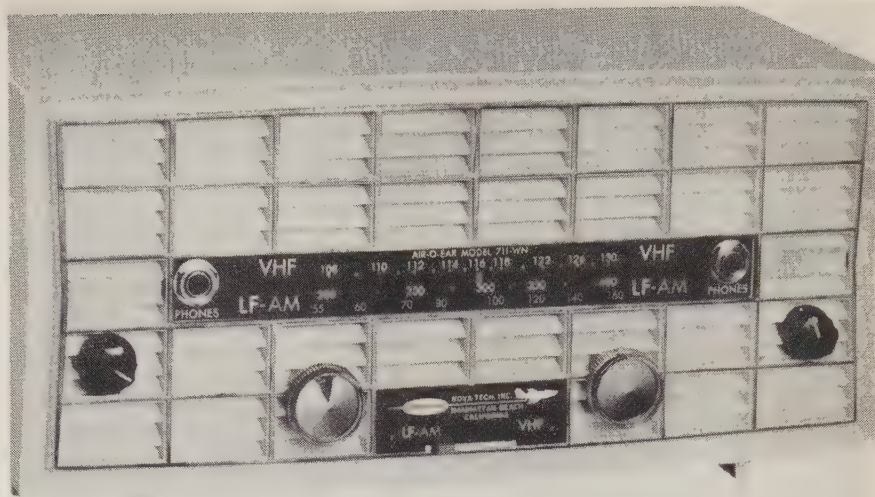
Non-professional personal business pilots whose expansion of their business flying carries them more and more to the realm of professional, high-intensity operation, can learn more of the pro techniques and language of ATC handling to their advantage. As far as airways flying is concerned, this is the only annex of the school of experience.

There are an increasing number of HF monitor receivers on the market. They got their first start as airline aids in keeping tabs on company trips when tied to ATC communications frequencies. Gate agents were next to demand this monitoring capability. Now their operational value as an intelligence source may far exceed the foregoing utilities, for business flying operations as well.

M Computer Speeds Airways Operations

The first electronic computer placed in operational service by CAA is in operation at the Indianapolis Air Route Traffic Center. The IBM 650 RAMAC data processing system is capable of computing and printing flight progress data, estimating flight progress reports and determining airspace confictions in flight plans. This is not to be confused with the cardatype machines recently introduced in some Centers that do not compute but prepare the flight progress strips for manual handling and computing by the controllers. By automatically performing these tasks, the 650 RAMAC enables greater concentration on the decision-making duties and hence safer operation, as well as faster service to the flying public.

According to John F. Wubbolding, Chief, IND ARTC, the RAMAC "maintains a complete record of flight plans, progress strips, airways and fix tables, and other ATC data, making any of it



NEW 3-BAND VHF AND LF MONITOR RECEIVER for home and office use by Nova-Tech tunes from 108 to 130 mc and 200 to 400 kc, plus broadcast. Designated Model 711-WN, it features built-in antennas, 6" speaker, 2 earphone jacks and 115 volt operation.

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available instantaneously as needed."

The installation also features two IBM 838 "Inquiry Stations" by which the ATC supervisor can send to the computer position reports, reroutings, requests for data, cancellations, changes in wind and other data, etc. Replies to inquiries and action messages are directed back to the Inquiry Station and typed automatically.

The stored program of instructions used by the RAMAC in preparing flight progress strips enables the computer to handle both airway and direct flights. The system will accept all possible aircraft routings, including latitude, longitude and relative direction junction points.

In processing an "on-airways" plan, the RAMAC draws the appropriate airway table from its "memory" and computes the distances from fix to fix, and with the plane's speed and the wind data, estimates the "time over" each fix. If a flight travels on several different airways or routes, the machine works with the appropriate segments of each airway involved by switching from airway table to airway table.

With direct flights, RAMAC refers to specially coded tables to estimate arrival at points that are located at a relative bearing and distance from radio facilities.

To determine whether two flights are due to arrive over a fix at the same altitude within less than safe time separation, the machine starts a conflict search as the flight progress strip is being printed for each fix on or near the route. For each fix in the control area, there is a table stored in the "memory" containing the flight identification, altitude and ETA over the fix for each aircraft planning to overfly that fix. If a confliction exists, a conflict notation is printed automatically on the strip so that the controller can take action to resolve the confliction.

As actual times "over" are received and inserted, the machine updates the fix tables by replacing the previous ETA's. Thus all flight plans are kept

current as the flights progress.

When an aircraft departs the Center area, the computer punches appropriate cards for the continuation of the flight which are fed into a card-to-tape punch which "reads" the data and converts it to telegraphic tape for transmission to the proper adjacent Center.

GAFFG Takes Stand Against 58-5

In a formal statement submitted to the CAB Safety Bureau, Dr. Leslie A. Bryan, Chairman, General Aviation Facilities Planning Group, has opposed the 58-5 proposal for the requirement that all airborne electronic equipments used in IFR flight be approved and built to the requirements of a CAA Technical Standard Order.

"Such requirements would obsolete thousands of equipments now performing very satisfactorily in general aviation aircraft, and . . . add to cost, complexity and servicing problems, without any commensurate improvements in position determining accuracy or reliability."

Dr. Bryan points out that general aviation shares the concern for safety in the operation of aircraft separated by ATC but that improved equipments are becoming available to the users through normal evolutionary processes quite independent of regulation.

The Group further recommends that air radio manufacturers work closely with the CAA in an effort to improve the existing procedures for the certification of service facilities in the field and individual competency certification.

Windshield Rain Repellent A Visibility Must

It is not unusual to encounter poor inflight conditions with light to moderate rain, yet side visibility is in the order of five to six miles. For aircraft with windshield wipers, no special problem is posed.

Unfortunately most singles and the
(Continued on page 68)

THE WORKING 'COPTER

Moving Company Demonstrates New Role for Helicopter as Aerial Asst.

Air-minded W. C. Moen, president of Global Van Lines, Inc., Los Angeles, Calif., demonstrated his forward thinking at the convention of the California Moving and Storage Assn. by having a helicopter move household goods.

Purpose of the helicopter was to illustrate how large items of home appliances and furniture can be moved into off-the-ground level homes, apartments and buildings, where conventional methods are not applicable.

"For years our industry has been stymied in trying to move extra large items into off-the-ground level units," said Moen. "Until now, people who had large items of household goods that couldn't be moved for one reason or another into new quarters, had either to store or sell them . . . costly in either case," he added. "The miracle of modern aviation, however, has eliminated this necessity."

The helicopter used to illustrate the lifting of household items so that they can be handled through French doors or other types of openings at any height above the ground was a Model 47G2



DIFFICULT TO MOVE, impossible to move in some cases, household items airlifted

Bell operated by California Rotors of Glendale, Calif. This model copter is capable of lifting approximately 600 lbs.

Global Van Lines' participation in cooperative "space age" industry demonstration is undoubtedly the offshoot of its president's own use of aviation to help keep his company's operation humming. Moen bought the first 1958 Piper Comanche sold in Los Angeles and already has many hours logged in transcontinental business use.

Surplus Military Copters and Parts Create Problems for Airworthy OK

Sales of surplus military helicopter parts and components has created problems in showing compliance with the requirements of CAR 6 and CAR 17 when civil airworthiness certification is sought by the purchaser, CAA's Robert Keely, director, Office of Flight Operations and Airworthiness, states.

Care should be taken to have records available on fatigue critical parts. Such records are unavailable, life limited parts will not be considered airworthy and, therefore, not eligible for use or installation on certified helicopters.

Engine Performance Maintained

Lycoming Div., Avco Mfg. Corp., reports that tests were made during which 65 lbs of sand were ingested under controlled conditions into a gas turbine helicopter engine. Wear and tear on the engine were comparable to that experienced in approximately 50 simulated desert-type Army combat missions.

Engine tested was the T53-L-1 with 860 shp. The sand was introduced into the engine inlet over a 25-hour period. Densities characteristics of hovering and ground effect were simulated.

Lycoming said the engine suffered performance loss of only 10%. Without engine removal and by replacement of a few field-replaceable parts, the original performance of the engine was recovered within 1.5%.

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Helicopters for Business



Two-Place French Copter Debuts Here

Demonstration of the maneuverability of the Djinn jet-powered helicopter was made at Republic Aviation Corp.'s airfield at Farmingdale, L.I., N.Y., when the craft made its U.S. debut there recently.

Already CAA-certificated, the Djinn (pronounced "gin") has been on an evaluation tour of U.S. military bases. Designed and built by Sud Aviation, the French firm which designed the Alouette jet-powered helicopter which Republic is assembling and marketing in this country, the two-place copter's rotor blades are propelled by jets of air drawn from their tips. The craft's demonstration test pilot is Dennis Prost of Republic Aviation.

The extreme agility of the small craft, says Herbert Munsey, general manager of Republic's helicopter division, can permit the Djinn literally to fly behind a tree, hill or building, then, in jack-in-the-box fashion, pop up at the right moment for a military strike.

Munsey said his company is evaluating the commercial and military prospects for the Djinn and has reached a tentative agreement with Sud relative to a licensing similar to the arrangement the two companies have on the Alouette.

The copter is 17½ ft long, 8 ft high and has a range up to 140 miles at a cruise speed of 81 mph. A commercial version is being built for European customers.

The two-blade rotor is driven by a tip ejection of compressed air supplied by the turbine generator. It

works on the same principle as a rotary lawn sprinkler, using air instead of water for the driving force. Adoption of this principle, and the elimination of mechanical transmission (air is piped to the rotor blades), has made it possible to do away with the conventional rear-end anti-torque propeller. Instead, the Djinn has a simple rudder assembly similar to an airplane's.

Two firsts claimed by the craft's designers are the ability to rise vertically with a total weight of more than double its empty weight and the ability to make a "dead-stick take-off."

Prost demonstrated the latter by shutting off the turbine after the rotor had reached maximum rpm, then taking off, moving forward and landing, using solely the inertia of the rotor. Chief advantage of this is to minimize danger in the event of power failure.

The Djinn can be transported intact by truck or trailer and can literally takeoff from a trailer as well as land on it.

The Djinn set a world altitude record for helicopters of all classes in 1957 when it climbed to 27,860 feet. This record has been broken by the Alouette which climbed to 36,501 feet on June 13 of this year.

Okanagan Helicopter Group Carries Out Heavy Operations Schedules

Increased activity in exploration work by major oil companies in the Canadian northwest resulted in a major fleet redistribution by Okanagan Helicopters Ltd.

A total of 15 Bells and one Sikorsky S-55 were put to work in the Northwest

Territories, northern Alberta, British Columbia and the Yukon. Oil companies using the craft are Shell Oil Company of Canada, California Standard, Imperial, Sinclair and Triad.

Two other contracts were announced by the Okanagan Group. One of these is a renewal of a contract with the Department of Fisheries, Ottawa, for the operation of a Sikorsky S-55 and a Bell 47 helicopter on the east coast. The two machines will be used for moving personnel, freight and serving remote outposts in Newfoundland. Operations base will continue to be at Saint John's, Nfld.

The other contract involves three Sikorsky S-55's with crews on an annual contract basis to operate in the Canadian far north on defense work. The contract was signed between the Okanagan Group and the Federal Electric Co., Paramus, N.J., for DEW Line construction and maintenance work in the eastern Arctic.

With the signing of this contract, it is anticipated the Okanagan Group will have its biggest year both in flying hours and in gross revenue. The company expects its 1958 gross revenue to exceed \$3,000,000.

On the Federal Electric contract, the three S-55's were dismantled and loaded in three C-119 Fairchild Packets and flown to their operating base. Operations started officially on July 1.

Crews and spare parts were also flown in by the C-119 under the supervision of Sig Hubenig of Canadian Helicopters, Toronto. The year-round operation, which will cover operation, maintenance and service, will be under the direction of Tom Gurr, chief pilot of Canadian Helicopters Ltd. Other pilots are Doug Daville, Harvey Easton and John Shaw. Engineers are Nick Temperley, Jim Britton and Karl Paupst.

In addition, the Okanagan Group has two Bell helicopters operating along the western Arctic Ocean from supply ships on DEW Line operations. The Okanagan Group is operating 47 helicopters under various contracts this year.

Unusual Development in VTO Field

Umbaugh Aircraft Corp. has made a revolutionary bid to the business field with its new Model 18. The craft operates by means of free turning rotor blades and takes off, climbs and cruises with the power from its pusher engine.

The dual control craft has a cruise speed of more than 100 mph and has a three-hour cruise range. It carries two passengers. Featuring a stall proof and spin proof design, the helicopter glides slowly without power.



Cap'n Sharp Says:

"A Real Bell Ringer!"

Yes, the 11th Annual NBAA meeting in Philadelphia rang the bell. Even put a crack in it! The "old pro" wishes you "safe flying" until next NBAA. 'Til then, depend on Jeppesen.

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Fort Washington, Pa.

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Round Table

(Continued from page 16)

aggressive, hostile or self-destructive impulses or make otherwise avoidable mistakes as a result of purposive carelessness or pre-occupation. It is time that we give more credence and importance to the factors and studies that will discern these tendencies.

Dan Vickers, M.D. (General Surgeon): I've never known a pilot to have a coronary in the air, diabetic crisis, fit or any physical thing that would incapacitate him. I have known a number of persons who have killed themselves and others through poor judgment, lack of mature self-control, exhibitionism, emotional immaturity and other things. I don't think there is a way of just saying in a little box whether a person has passed that sort of test. I think in small communities, the doctors know the people they are examining, and they know if they are emotionally capable of mature piloting or not. It's easier than in big cities where the examiner doesn't know anything about the individual. On the other hand, in a small community you hate to turn anybody down. If you do, then you get blamed for it. Most doctors think they are going to lose a patient. I think doctors should send in information on every case they examine, whether or not they send in a form.

Dr. Gentry: You'd be surprised how many doctors do this. They'll put down something that gives us some insight into the situation.

Dr. Vickers: I feel that all these individuals should be thoroughly examined, not just from the physical aspect. I'd like to tell of two cases to illustrate this psychiatric business. A man bought a new airplane. The pilot who checked him out wrote to the manufacturer and said that he would give this man four weeks to get into trouble. Four weeks to the day, he killed himself and three other people. That man in the past two years had a repeated list of violations and troubles, not only with CAA but also with airport operators. This is kind of hard to believe, but he had landed a Tri-Pacer at night on a New York State Thruway, out of gasoline. He got away with it. He was reprimanded and given a check ride by the CAA. That was the end of it, and he went on flying. He nearly got into a fight with an airport operator in the metropolitan area when the operator saved his wife from walking dangerously near a turning prop. He was furious because he thought the operator shouldn't have grabbed his wife the way he did. This man's motor vehicle habits kind of bore out his flying habits. I think it's good to get rid of people like that, but I hate to see him take three other people with him.

Another gentleman also had been in trouble with the CAA on two occasions that I know of. He was allowed to pay a \$50 fine rather than go through a lot of hearings and that sort of thing. He was permitted to go on flying. He was expelled from one airport because he was doing low level acrobatics at 6 o'clock in the morning, and he went to another

airport. On his last pass he went over the airport against the traffic pattern with his wheels six feet off the surface pulled up to 400 feet did a barrel roll or half a barrel roll, split-S'd out and killed himself. This man's motor vehicle habits left a great deal to be desired. He was unable to get insurance himself and drove the car in his wife's name.

I'd like to suggest some things that should be done. I think there ought to be some machinery to investigate all accidents, not just fatal accidents. I know the CAB does a wonderful job of investigating the carrier accidents, but...

Dr. Gentry: Any careless flying should be investigated. If a man flies too low over a residential or industrial area, he violates the CAR. Anyone who has the courage to write in and say that John Doe flew an airplane on a certain day at a certain height over his house, then that incident should be investigated.

Dr. Vickers: A thorough study should also be made of the private and general aviation accidents. The General Safety Division of the CAA in the Fourth Region analyzes accidents quarterly. I suggest some study of this nature, but broadened in scope, to determine where there are pilot tendencies to accidents that could be picked up ahead of time.

After it is investigated, I think that whether or not the pilot hurts himself such individuals should be evaluated. Their automobile driving habits should be correlated in this. If they are offenders, there should be some means to control them, either by closer supervision, more frequent medical examinations, or perhaps, special psychiatric evaluation. I think it would be well to enlist in some way, also, the cooperation of the airport operators regarding people who are immature in their flying, endangering themselves and others.

Dr. Leet: I'd like to propose that we consider ways to introduce a neutral examiner for the reasons brought on by Dr. Vickers and Dr. Sullenberger about the general practitioner. Even though he may want to do his best, it's sometimes difficult to turn down an individual for personal or other considerations. A second proposal is, that these examination forms it is so easy to overlook the personality. There are two small categories at the bottom. One is for neurological examination, usually marked negative; the other is for psychological. They ask for one thing, psychomotor test... which is such an inconsequential part of it. Immature, impulsive and panicky acts... those three things contribute to accidents more than others. It does appear incongruous that we should give about 98% of the examination form to the physical part, and only 2% to the personality. I think we should broaden and strengthen this aspect.

Dr. Gentry: Those are excellent suggestions. Let me say that the military services have been aware of that for many years. They grade a man after complete psychological and psychiatric evaluation. It's a little different, of course, because the government is getting ready to spend \$100,000 training

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man as an expert military pilot.
J. R. Finlay: You are our consultant. If we run into a psychiatric problem, we can pass the buck to you. We don't have to hem and haw about it.

Gentry: Well, I'm not a psychiatrist. But if the Flight Safety Foundation recommendations are carried out, I'll have a whole panel of consultants. Nobody can be a specialist in anything, as you well know.

Finlay: I think the greatest advice was made in physical examination when we changed from the old to the forms 88 and 80. I was at West Point at that time, clearing cadets for flight training. They were on the old system, and they were pretty reliable. But they had very vague histories until the form 88 came out. The line they had to swear to their medical history. From that time on, not really reliable histories. Prior to that time, histories were nearly worthless. I think a new physical examination should include a history which has medical and/or legal significance.

Gentry: We have a new form that says one may be put in jail and fined up to \$10,000 for falsification. It's a Class III form, but I hope it will be incorporated into all of the forms. I'm amazed at the number of young pilot pilots who get a blank medical form and fill it out themselves. They're no one can read a doctor's signature anyway, so they just sign some anonymous name and never really have an examination!

J. Heritage, (Sales Engineer, WinDoor of New England): It's been pointed out before that the family physician would probably get to know the person and his conditions over a period of time, and the family. The way the physicals are done, you can go to any part of the country. As for myself, I've never been back to the same doctor because of my flying. Would it be practical to make it compulsory to return to the Regional doctor every year?

Dr. Gentry: You'll never get Americans to agree to anything like that. Doctors wouldn't like it, the applicants wouldn't like it. That's why we go to war, fighting for our privilege of making our own choices. But we can still supervise these things. You've got a good point. By going to a different doctor, this fellow may think he's getting away with something. But that report of physical examination gets sent to Washington where they've got the report of every examination. If things don't add up right, an investigation is started. We have applicants who do that. Turned down in one place, they go to another. But, as Dr. Vickers pointed out, if everyone who examines somebody would send in a report, then a peg would have been driven into the ground, and with other reports coming in, you can compare them. There are people dodging the laws in aviation just as there are people dodging the income tax laws.

The family doctor sometimes hates to turn down someone who, maybe, has shown great fortitude in overcoming polio or something. He says, "Well, let him try," not knowing the dangers associated with flying. Many a family doctor who knew that Johnny had asthma had given him a certificate. Johnny got up to 5, 7, 8 or 10,000 feet and ran into some pollen that had blown in from another area and had a severe attack of asthma, choked up, and the plane came sailing down, maybe crashed into a roof and burned up some children or aged persons who couldn't get out. Not only was the family in trouble, but the doctor. The family would say to the doctor, "You knew he had asthma, why did you give him a certificate?" They then sue the doctor!

J. T. Worcester, M.D., (President, WinDoor of New England): I notice in the new form they speak of using confrontation tests for visual fields. Those are satisfactory, but if there is any ques-

tion, they should be examined by perimetry. Today I think the visual acuity is becoming a more important factor, but so is visual field. Therefore, I feel that a proper visual field should be mandatory.

Along the same line I think that the ocular tension is an important factor. As a rule, outside the field of ophthalmology, I don't think ocular tensions are taken very much. But we do know, for example, that you come up once a year for examination, on confrontation tests or a rough field of vision test. You may be perfectly normal, have 20/20 vision right down until you lose the last bit of field in glaucoma as such. We know that in a year undetected glaucoma can take away a good deal of the peripheral field. Fatigue is another important thing, muscle-balance wise, as is the question of whether just manifest refraction is satisfactory or not from the standpoint of muscle balance. Then, of course, at the end of a long day, ocular fatigue is important.
W. E. Knaup, M.D.: When thinking of the various medical specialties we usually associate the eyes with the ears, nose and throat. I specialize in the latter group.

It is important to have sufficiently good hearing to maintain good radio communications, cockpit conversation and be able to pick up unusual or irregular engine or airframe sounds.

With regard to acute infections of the ears, nose and throat, such as the common cold, most pilots know that it can be dangerous to fly during their presence. Not only are you generally uncomfortable during a cold, but also you are weaker physically and tire more easily. Your thinking and ability to make decisions are less acute. During flight, and especially during descent, sudden ear or sinus pain from an aero otitis or an aero sinusitis is not infrequent. During an upper respiratory infection your balance may also be considerably impaired.

Dr. Gentry: Should there be any difference in the requirements for Class I, II and III in regard to perforated tympanic membrane?

Dr. Knaup: May I say first, that a perforation of the tympanic membrane, in simple words, is a hole or tear in the ear drum caused by injury or infection.

This perforation can be either dry and without symptoms or associated with a middle ear and mastoid infection. An ear with a perforated eardrum will have the following characteristics:

1. The ear will show some deafness, although maybe not more than 10-20%;
2. It is a weaker ear because of the lack of a strong barrier against infection;
3. The ear may be more prone to produce dizziness or labyrinthitis, with the possibility of serious results as previously described.

I personally feel we should make a study of this important problem before coming to any conclusions at this time. I might examine a dry, quiescent ear and say it is OK for flying today. However, that doesn't mean that the ear would remain that way through the six month- or two year-period for which the exam has cleared the individual.

Dr. Gentry: At the present time in Classes I and II, perforation of the tympanic membrane is cause for rejection. In Class III, it is not cause for rejection. These people are not permitted to swim because of the possibility of infection. I feel that the expansion of gases at altitude, and the compression at lower altitudes can be just as dangerous.

This expansion of gases can have an equally bad effect on a woman who is pregnant. This is one reason why, beyond the eighth month, they are not permitted on airlines. Premature labor can be started by the expansion of gases in the intestinal tract.

H. A. Heise, M.D.: In my opinion the medical profession is placing unwarranted emphasis on stereopsis. The ability of the pilot to locate objects in space does not depend as much upon a cortical evaluation of a geometric function, based upon the difference in the images in the two eyes, as upon a series of visual messages whose interpretation depends on experience with the size of objects and particularly on the change of the appearance of objects as affected by the rapid motion of the observer. This includes a changing point of view which fixes an object in space. How often have you mistaken a speck on the windshield for an airplane?

As a good example of the capabilities of one-eye vision, compensated by good vision in that eye, the world champion in small plane racing has only one good eye.

Dr. Gentry: How old was he when he lost the vision of the bad eye?

Dr. Heise: He was a rather young man. He's about 48 or 50 years old now. He still wins his races which demand going around pylons at up to 200 mph with small planes, one practically on top of the other; yet, this man knows where he is every second of the time. He is not lost in space. Recently, he was

refused a license until he was able to make his peace with the CAA when it was accepted on the basis of his record. I think this is a good example that you may have been a little overcritical about this particular part of the examination?

Dr. Gentry: Which part of the examination? Depth perception?

Dr. Heise: Yes. Depth perception is important for small distances, but I believe that we have overemphasized the importance of stereopsis as far as flying ability is concerned.

Dr. Finlay: I disagree. Stereoscopic vision is one of the seven or eight factors which give us a clue to depth. It is active over 20 feet.

Dr. Gentry: How can you shoot a flying duck, if you can't judge distance more than 20 feet away. I never killed one at 20 feet or less.

Dr. Heise: Don't shoot with both eyes.

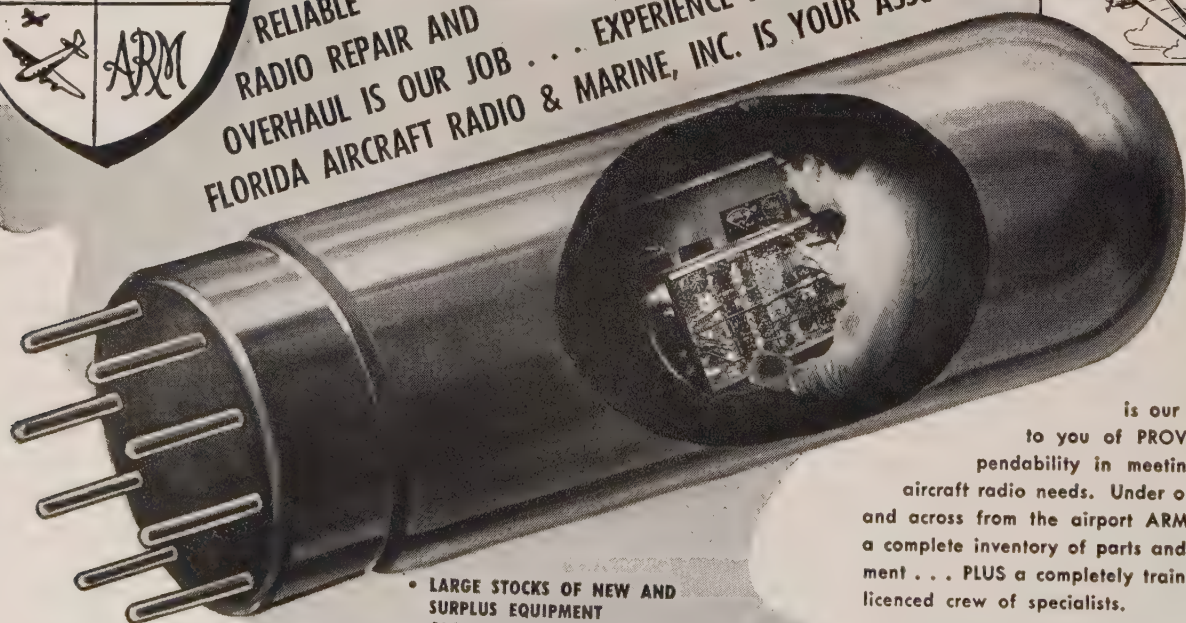
Dr. Finlay: The accepted technique is using both eyes. But most young hunters who start out with one eye depend on shades and shadows, overlapping contours, size or image, motion parallax (moving the head from side to side). This pilot Dr. Heise speaks of is very good and does very well with one eye but that doesn't mean that without qualification we are going to accept anybody with one eye without study.

Dr. Worcester: I think the significant factor here is—when was the sight of the eye lost? During World War II, a chap in Canada did some study, and he found that boys who had an amblyopic eye from birth or childhood

(Continued on page 46)



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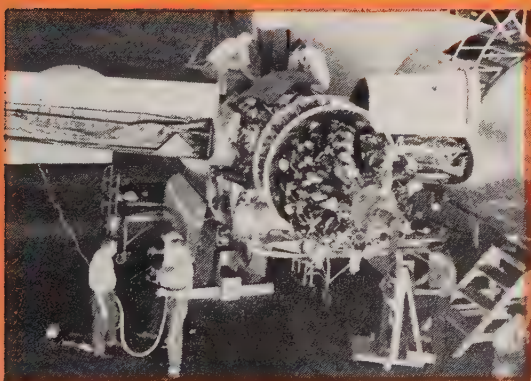
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Accessory—Propeller Governors—Hamilton Standard, All Models; Woodward, All Models.

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First Order for Rotodyne VTO Placed by Okanagan Helicopter Group

The Okanagan Helicopter Group of Vancouver, B.C., Canada, has ordered the first Fairey Rotodyne vertical take-off aircraft (reported in SKYWAYS, page 38, June 1958).

Delivery will be in the next two to three years. The unique Rotodyne will be used by the Group on passenger services between city centers in Canada.

With a fleet of 54 helicopters, Okanagan is the largest commercial helicopter operator in the world. In the past ten years they have logged 100,000 operational hours, carried 75,000 passengers and thousands of tons of freight. (See SKYWAYS, page 28, August 1958.)

Glenn W. McPherson, President and Managing Director of Okanagan, explained the order with, "We thought that if we were going to get in on the ground floor with the Rotodyne we had to order now. In aviation, you have to make up your mind early if you are going to pioneer."

The Rotodyne takes off vertically as a helicopter with its rotor driven by jets at the tips of the blades. These jets are supplied with compressed air from auxiliary compressors driven by two Napier Eland propeller-turbines mounted on the fixed-wing. At operating height, the auxiliary compressors are declutched, the tip-jets are cut out and the power is gradually transferred to the forward-facing propellers. The Rotodyne then cruises in forward flight as a "conventional" twin-turboprop fixed-wing plane with the rotor "free-wheeling." The procedure is reversed for landing.

The Rotodyne will carry 48 passengers or less in an executive interior configuration. Cruise speed with 12,000 lb load is 185 mph over a range of 200 miles. It will carry 34 passengers or 7,000 lbs over a range of 400 miles. Rotor diameter is 90 ft; fuselage length 58 ft, 8 in.

Oilfields Need Aircraft

Far from being a luxury item for western Canada's oilmen, the business aircraft has become more of a pick-up truck and taxi for the fast transport of field crews, equipment and supplies. In a survey conducted at Calgary recently, most companies claimed that use of the company plane as an executive transport was secondary to its role of men, spare parts and supplies.

The survey showed that one firm operating a fleet of five light aircraft during 1957, spent \$450,000 for the year. Another company operating a DC-3 out of Calgary's McCall Field, estimates that it costs them between \$170 and \$220 an hour to keep their aircraft in the air. Storage costs for the Dakota amount to \$500 per month. According to the newspaper story, the survey revealed that still another company estimates an \$80 per hour cost for their 10-passenger single-engine aircraft.

However, when trouble develops at remote wells or drilling sites, spare parts or whatever is necessary can be brought in fast by air. Aircraft have also been utilized in Canadian oil fields for hauling heavy drilling and seismic equipment. For these reasons, oilmen claim that the costs of operating an aircraft are more than covered by the necessity of their operation.

Aerial Spraying for Marine Growth

In an attempt to find a formula that will destroy or break up beds of filamentous algae that have been an odorous nuisance at some Lake Ontario beaches this summer a crop-dusting plane chartered by the Farm Research Institute sprayed a 15-acre area of lake front at Oakville last month. The experiment, run with the approval of the Ontario Water Resources Board, was carried out using 1,000 pounds of a mixture of four different chemicals.

If the aerial spraying is successful, a more extensive area will be covered next year.

DoT Personnel Appointments

Fourteen regional superintendents have been appointed in the six Department of Transport air services regions. These appointments fill the new position of Regional Superintendent, Airports, established in the recent re-organization of the Civil Aviation Branch, as well as vacancies created in the positions of Regional Superintendent, Airways, and of Air Regulations. The new appointments are as follows:

Regional Superintendents, Airports—Moncton, L. V. MacDonald; Montreal, C. H. Delisle; Toronto, D. A. McIntyre; Winnipeg, R. E. St. John; Edmonton, E. G. Clarke; Vancouver, T. W. Tait. Regional Superintendents, Airways—Moncton, S. Lantinga; Montreal, J. A. A. Guyot; Toronto, F. T. Hughes; Winnipeg, C. A. Appleton; Edmonton, T. Prescott.

Regional Superintendents, Air Regulations—Toronto, M. E. Louch; Winnipeg, J. D. Craton; Edmonton, P. S. Walker.

Airport Improvements

Transport Minister George Hees recently told the House of Commons that his department is working as fast as possible to improve airport facilities in Canada. Mr. Hees cited plans for new airport buildings at Winnipeg, Regina and Victoria. He said that it was hoped a new building could be contracted for at Sault Ste. Marie, Ontario, next year sometime.

Meanwhile the Halifax International Airport at Kelly Lake will be completed and officially opened for air traffic within 15 to 18 months. In addition to the 1,250-ft long administration building, nine more structures will be built on the site before the airport is ready for operation.

The new airfield will be equipped with every convenience for modern airlines either conventional or jet. Radar installations, an instrument landing system, and high intensity lighting beside the runways will serve as aids to pilot landing under difficult weather conditions.

At present the main runway at Kelly Lake is 8,800 ft long and can be extended to 10,000 ft if desired. The other runway, first constructed at 6,200 ft, is already being extended to 7,700 ft and is expected to ultimately stretch 8,000 feet.

Minister of Transport Hees revealed that last year among DoT operated airfields, Montreal's Dorval had shown a profit of \$338,494; Toronto's Malton \$548,435; and Winnipeg's \$147,591. The field at North Bay, Ont., had operated at a loss of \$132,000.

New Role of the CAB

(Continued from page 29)

over the country which could swing into action immediately, and that there was no need to duplicate a separate network of aviation experts to investigate crashes.

The CAB kept the accident investigations and the new FAA got the rule-making power. It was felt that by removing from the CAB its rule-making power the last possible vestige of any prejudice or vested interest in an accident investigation *would* be removed from the Board. The fact that at this very time we were investigating the recent Las Vegas crash where there was involved a real question of the adequacy of the Board's own regulations lent particular weight to this consideration. As to rule-making, the Congress felt that this was indeed an indispensable adjunct of traffic control and research and that this job could not be satisfactorily divided between two agencies.

This was a reasonable, a rational and, I believe, a workable solution.

Great credit is due to Senator Monroney and the members of his Committee and of the House Committee under Chairman Harris for doing a difficult, complicated job in an amazingly short space of time. As I said earlier, the FAA Act of 1958 is one of the great milestones in the progress of American aviation.

Under the new law, this responsibility for the civil air regulations is placed squarely on the FAA, which will both make the rules and interpret and enforce them. This does not mean that the CAB will withdraw from the rule-making sphere.

Under the new Act, the Board is given the right and the duty of participating in the FAA rule-making activities as one of the parties to the proceeding. For safety rule-making must always take place with full cognizance of all the economic factors involved.

Take the flight recorder which preserves a continuous record of the significant details of a flight and which will survive almost total destruction of the aircraft. It is a very expensive piece of equipment. If ordered placed on every plane probably 80% would never take off again. However, the cost does not seem so great when you think of a commercial transport which may carry as many as 200 passengers. The Board decided that the cost was justified on all air carrier planes certificated for operation above 25,000 feet, but not on other planes—the result of a combined safety and economic judgment.

It is this type of combined safety and economic analysis which I feel the Board can and must continue to bring to bear on safety problems, as an active party in the rule-making procedures of the new agency.

Now that rule-making and accident investigations are in two different agencies, the closest liaison will be necessary if aviation is to take full and immediate advantage of every lesson to

be learned from the tragedies of air accidents.

As soon as a crash occurs, a CAB investigator is dispatched to the scene of the accident and takes charge. With the help of local police and fire departments, he seals off the crash area. The investigation commences immediately, often within a few hours. Working committees with the necessary technical qualifications are appointed. A Witness Committee rounds up anyone who saw or heard the crash or the plane during the critical time prior to the crash. The Committee takes detailed statements from all witnesses while their memory is still fresh.

An Operations Committee seeks out

all known facts about the history of the flight, the crew, the weather, the radio traffic to and from the plane, and all other details of the flight. A Power Plant Committee recovers the engines and strips them down in detail, examining every piece for possible malfunction. A Special Radio and Electrical Committee may be set up to do the same job for the communications and electric systems. A Structures Committee commences a piece-by-piece examination of every other piece of the plane for possible failure. Special Medical Committees may be set up. An investigation of the prior history of each crew member and each passenger may be instituted, if there is any hint

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of sabotage, as in the recent Langmont, Colorado and Daggett, California cases.

In a major crash, tens of thousands of man-hours go into the investigation.

Now how can all this be done by a small agency like the CAB whose total investigatory staff numbers less than 50 people? It is done by pulling into the investigation experts from every conceivable source. The Board investigators take charge, lay out the jobs to be done, follow up and coordinate the work, and pull it all together at the end; but much of the detailed work must be done by experts called in from outside. In the Bryce Canyon DC-6 crash, for instance, personnel from the CAA, Douglas Aircraft, and the airline joined the Investigating Committees immediately, as a matter of course. Within the next few hours many other groups requested permission to join

the investigation—the Air Line Pilots Association, the Air Transport Association, Lockheed Aircraft Corporation, the Air Force, the Navy, other U.S. and foreign airlines who were all anticipating delivery of DC-6 aircraft. In all, there were 129 experts in addition to scores of experts in the Douglas organization.

The Bryce Canyon investigation proved to be the largest single investigation in the history of aviation. The track of the aircraft was carefully traced on the ground; component parts of the structure were recovered up to a distance of 26 miles from the crash. Eventually, the entire aircraft was shipped to Douglas in Santa Monica, each part identified and re-shaped, and a complete reconstruction of the plane undertaken. The sequence of failure was reconstructed in minute detail.

Then a flight-test program was inaugurated, simulating all known conditions and using dye-fluids to check fuel and air flows.

As the separate investigations by scientists, engineers, flight personnel and laboratory technicians began to dovetail and take on meaning, a Modification Committee was set up. As each item of structural failure was proved out, the Modification Committee would initiate change procedures for Douglas engineering. By the conclusion of the investigation, the necessary design changes were well underway.

Part way through, the investigation took a dramatic turn. A fire broke out in the same place on a DC-6 of another airline while in flight near Gallup, New Mexico. The plane through fine airmanship, was landed on a sod strip at Gallup Airport. The passengers were deplaned and the fire was extinguished within 30 minutes. The CAB immediately placed this investigation under the jurisdiction of the Bryce Canyon team. The fire proved of identical origin, and confirmed beyond any doubt, that the Bryce Canyon findings were correct. The end result was major modification in the aircraft, an early lifting of the grounding order which the manufacturer had voluntarily imposed, and a long and successful history of safe flight for this series of aircraft.

This story of aviation progress through accident investigation has been duplicated many, many times. In some cases, the cause of an accident has been human error, in some sabotage, in some structural failures or systems failures. But with only a handful of exceptions, if the remains of a crash can be found, the cause can be determined. In the investigation of a major over-water accident where almost no aircraft wreckage has been recovered, and through the cooperation of the Armed Forces Institute of Pathology, which developed

(Continued on page 68)

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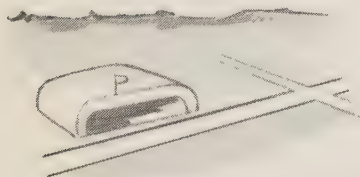
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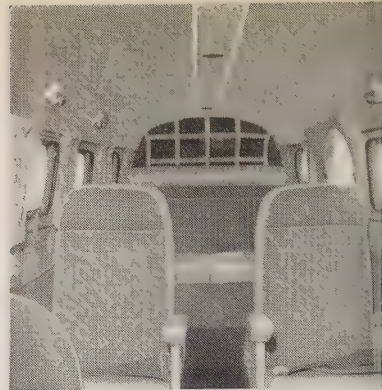
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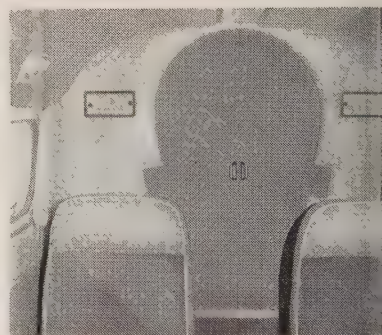
For more information call Charles Groff or Jim Speer at Ohio Aviation TW 8-4646.

THE OHIO AVIATION CO.

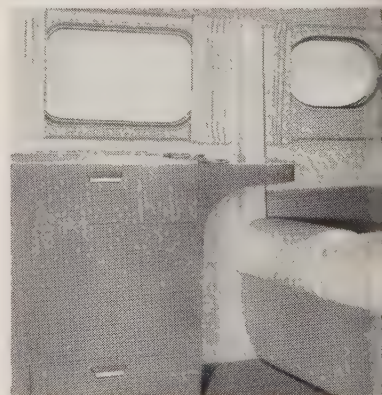
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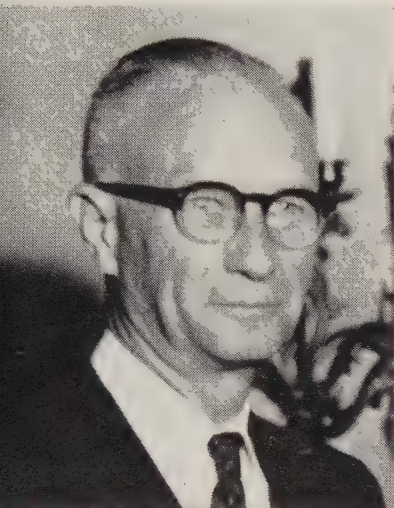
Picture window with compact, fold-down writing table installation underneath.

Circle No. 32 on Reader Service Card

National Association of State Aviation Officials

7th Annual Convention, Philadelphia 1958

The strength of civil aviation in meeting the challenges of the diminishing airspace, the growth of business flying and the dawn of the jet age clearly tied to the degree of cooperation that is accomplished by large rep-



OL. A. B. MCMULLEN, Executive Director, NASAO

representative groups in this newest and most dynamic force in our way of life. A prime example of this type of cooperation is afforded by the joint meeting in Philadelphia of the National Business Aircraft Association and the NASAO. The true depth of this mutual esteem and recognition of a common goal lies in the fact that many NASAO members came early in the week to enjoy and participate in NBAA activities and quite a few NBAA members carried a day or two rather than miss some of the fine NASAO program.

On Sept. 24th, the two organizations integrated smoothly to present a solid front at the Air Traffic Control Seminar (which was co-moderated by Crocker Snow, Chairman, Research and Developments Comm.), the Civil Air Power Parade at the airport and the enjoyable Pennsylvania Dutch Night picnic, where many NBAA and state aviation officials from the same parts of the country became well acquainted for the first time. (See NBAA report.)

Short Fields Program Urged

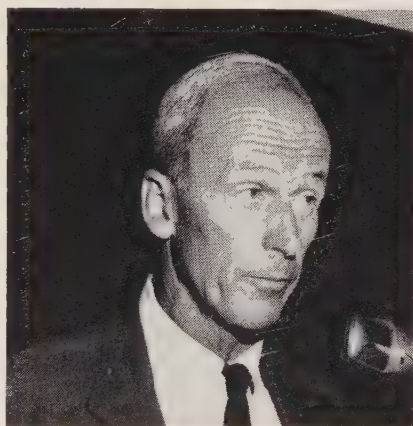
The NASAO sessions continued on Thursday morning with the early breakfast at which Lynn L. Bollinger, President, Helio Aircraft Corporation, urged the assembled state aviation officials to include ultra-short landing fields in their planning. He pointed out that STOL (Short Take-off & Landing) aircraft are showing up in larger numbers in Germany and Russia, that

the military are taking more interest and that if these short-strip areas are included in a set of national standards, they can be used by rotary wing and VTOL aircraft as well.

Further, encouragement of this field of design holds much promise of reducing air traffic congestion, runway crowding and collision hazards on established landing fields.

In recommending that the STOL strip dimensions be made 400 ft x 200 ft plus an added 100 ft of clear approach at each end, he noted that this type of property could be found fairly close in to most urban centers. Also, that minimum standards of ceiling and visibility for such locations could be lower than standard airports and traffic could be channeled safely in "air tunnel" access routes below the higher speed and longer range traffic to and from the terminal airports.

"Ole Bill" Piper, Sr., warmly received and regarded as the dean of personal aviation, spoke briefly in favor of a campaign to arrest the growing trend to convert small airports into housing developments. This unfortunate, short-sighted policy on the part of many communities is going to cost them dearly in the near future when they discover that free, quick access to business centers, not provided by the "jet-age terminal projects" now in the news, will find much of the new blood of business and commerce flowing to rival communities.



CROCKER SNOW, Chairman, NASAO Research and Development Committee

Business Meeting—Committees' Reports

Following the breakfast, the NASAO received business reports from President George Nelson, who revealed that their organization contributed much of the survey and ground work that finally brought forth the Federal Aids to Airports Program. He reminded all present of the continuing need for vigilance in airspace matters to protect the interests of their state aviation activities.

The Diminishing Airspace

Appropriately, the next speaker was Harlon W. Bement of Utah of the NASAO Airways-Airspace Committee. In a very forceful manner, he noted that there seemed to be a race going on between the positive control adher-

ents and the military to see who can acquire control of the most airspace. Noting that the new FAA Administrator will not present the case for civil aviation (see Editorial this issue), there is a very great danger that military aviation may wield a disproportionate amount of influence.

Similarly, many of the navigational aids are still being installed primarily on the basis of the needs of scheduled airlines and the military rather than for general aviation, the biggest user.

Mr. Bement pointed out that the FAA definition of air navigation facilities now includes "landing areas" and that it goes on to specify that "no airport or landing area not involving . . . Federal funds shall be established, constructed . . . or runway layout altered unless prior notice is given the Administrator . . . so that he may advise as to the effects . . . on the use of airspace. . ."

It was stated by government agency personnel present that they acknowledged many possible deficiencies in the bill as passed but the advantage of attaining a unity of central authority in jurisdiction of airspace outweighed for the moment trying to include all desired changes that would have delayed passage.

More Voice For General Aviation in ACC

A strong presentation was made from the floor for more voice in the councils of the Air Coordinating Committee and Local AirSpace Subcommittees. Inasmuch as CAA formerly constituted the civil aviation spokesman on the ACC, the question arose as to who would do so under FAA, which specifically is directed not to? Would there be any general aviation representative or any voting authority for this largest segment of the airspace users?

It was explained that local Sub-Committees forward only unanimous recommendations to ACC, with any divergent views on any subject forwarded only for information purposes. Also, whereas the minutes of top ACC meetings are often administratively restricted, the military determine the classification under the aegis of national defense need.

The point was made that the Administrator, not being a user of the airspace in the general sense, should be an impartial arbiter of airspace problems. The agency member noted that the FAA bill as passed required that he be a "civilian."

In a discussion of "joint-use" restricted airspace areas, it was explained that a call to the CAA communications station or Center would obtain transit clearance when not in use by the military.

James D. Ramsey enumerated results of study by the Navigational Aids Committee, of which he is chairman, regarding "numerous problems."

Airport Design (Revision of TSO N6b) recommendations were that CAA should issue a policy and procedure statement to be used in the application of this order. Association's Committee

(Continued on page 57)

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Round Table

(Continued from page 46)

equally well, if not better, on their proficiency courses as those who had two eyes with a slight muscle imbalance. This goes back to what we said about fatigue. The slight muscle imbalance is worse when it comes to judging depth. I just don't think that your stereopsis is quite as important as it has been made out to be.

Dr. Gentry: As Dr. Finlay says, we must remember that there are a number of ways that we judge distance. The test that we give for pilots is a check on some of the other tests. If you find a man who has equally good vision in both eyes, nearly every time, you'll find that his depth perception is good. If there is a great difference, as in an amblyopic eye, then his depth perception will nearly always be poor.

Dr. Gentry: The tests for phorias confirm other parts of the eye examination.

Dr. Heise: Another point, which has not been considered very strongly is the effect of alcohol. I'm on the Medico Legal Committee of the American Medical Assn. I think it should be known to all aviators that alcohol acts to cause hypoxia. That is, the brain that gets alcohol does not get sufficient oxygen; without enough oxygen it does not function properly. The individual feels he is doing as well as ever. He loses judgment; becomes a menace. Added to alcohol hypoxia, may be that of altitude, carbon monoxide.

I believe that the drinking habits of the individual should be given more weight.

Dr. Gentry: I am sure that we all agree with you.

Dr. Finlay: Dr. Durham and I feel that everyone of us in our specialties feel that the flier ought to come to us primarily. It isn't practical to send the flier to all specialists. But I still feel that an adequate history will bring out most of the deficiencies. I don't quite understand what you said about Class III physicals, that they would have a history that the pilot would have to counter-sign. But you didn't mention the other two classes.

Dr. Gentry: It's a new form that has been published recently for Class III only.

Dr. Finlay: Do you know that it has legal teeth in it? The fact that the pilot swears that he has not made any falsehoods?

Dr. Gentry: It refers to a federal statute.

E. J. Justis, Jr., M.D.: Getting back to the personality factor in many accidents, could a simple test be devised for, say, the Third Class Certificate to screen out the borderline neurotics and psychotics before they actually begin flying?

Dr. Leet: Unfortunately, no really simple tests are available. There are some good tests, but they are complex and little long. It takes specially trained personnel to give the test. But more

(Continued on page 62)

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NBAA Meeting

(Continued from page 28)

didn't save the Lockheed JetStar for the last act of the day. Many outstanding demonstrations to follow were to be almost anti-climax after the JetStar pulled off the ground in 7.5 seconds from release of brakes, and held an extreme angle of climb to an estimated 1500 ft just past the boundary, then slipped around northeast of the airport to come back in what looked like a penetration pass so fast that neck muscles ached to follow it and capped it by a climbing turn to the right that was by all odds the prettiest picture

of the day. It left no doubt in anyone's mind that here was jet fighter performance of only a few years ago, in figuratively, the grey-flannel suit of the flying businessman!

Vertol with their trio, the 44, 76 and 107 got more than their share of attention as the big machines scampered up and down the ramp, and around like nothing so much as Barnum & Bailey's circus ring pachyderms. Maybe that isn't entirely accurate because the twin-turbine 107 pranced down the apron strip once in a manner more closely resembling the beautifully trained and handled equestrian displays!

A rival for the most eagerly awaited performance was clearly the Grumman

Gulfstream. In its first, real public debut it was the first airplane for which the business pilots headed as they barked from the buses on arrival at airport. This entirely civil, unsupported by military, design was a center of attention all throughout the show, the "fly-by", as it whistled by, slender nose probe accentuated swift lines, very clearly proclaiming winner by anyone's standards in the age of business flying just dawning.

Just so that everyone didn't start serious, the Colonial Skimmer taxied by at one point with its large hatch open and Raoul Castro of International Harvester, grinning from ear to ear, contentedly paddling away with a paddle, putting the point across well.

The "fly-by" of two Mark 2s flapping their retractable gear up and down faster than any we have ever seen and varying from a very impressive, slow control configuration to a snappy cruise, didn't hurt any at all.

Did you ever see a house fly?—on a houseboat, better yet? If it wasn't a certainty that no alcoholic refreshments were available at the ramp, spectators might have doubted their own sobriety when Sikorsky strapped their giant turbine, amphibious hull helicopter up and down the ramp like a monstrous football. It is incredible that anyone, even Sikorsky, could design such agility and performance into such a giant and so looking machine.

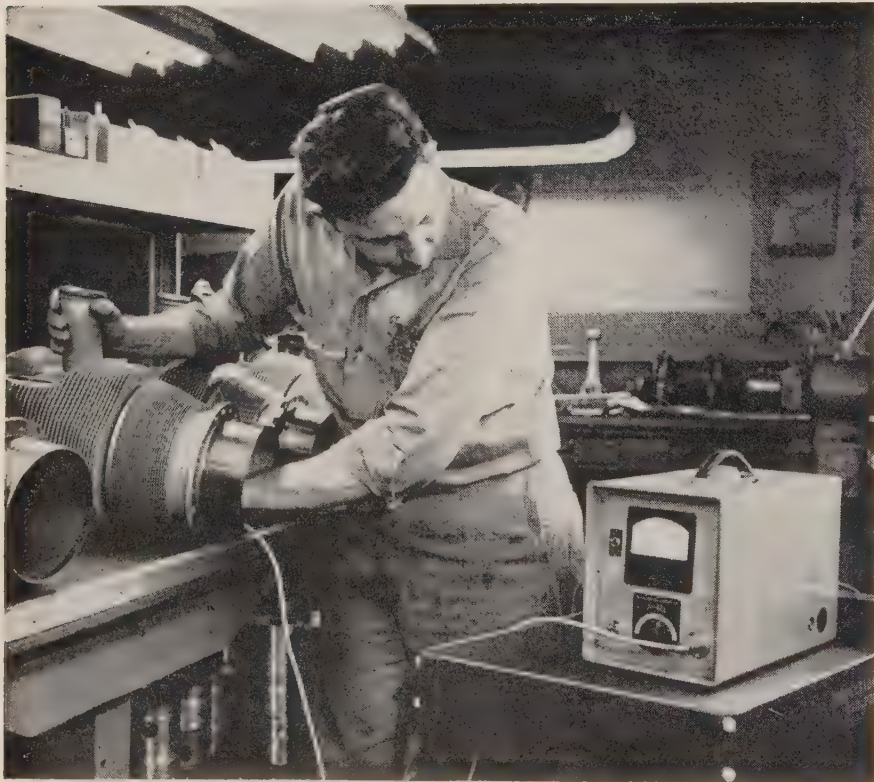
The last and certainly not least feature of the show found the Stinson Ventura by Howard Aero Corp. trying the advances that have been made in an airplane of original high performance that has earned the respect and affection of business pilots.

And we just remembered that we most dropped our coffee at the end of the afternoon, when on looking out from the open hangar door, we espied a high-wing monoplane apparently hanging in mid-air without benefit of rotors or other visible means of support. Quick inquiry revealed that it was old Doc. Lynn Bollinger, the defessor turned airplane manufacturer and his Helio Courier taking advantage of the light wind to show-off a short landing with the STOL bird!

Pennsylvania Dutch Nite

The "Hex" was on, even though the program promised it wouldn't be. I else do you explain the fact that in spite of a groaning table with all kinds of Pennsylvania Dutch good cooking including appel butta und tub buta an ocean of liquid refreshments ranging from country cider to Ole Mountain Mule, one of the best and most versatile dance bands available in the country or big town, nobody—but everybody got under the weather?

Cross our corporate heart, it's true! We have never seen so many people having so much purely as fun as NBAA and NASAO members mixed it up for a party that will be remembered with no regrets or aches in the heads, for time to come. Gee! We wish you were all there! Come next year!



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This Airwork Inspector is electronically checking the surface finish on a cylinder wall with a profilometer. This device registers the microscopic roughness of the cylinder walls—an important factor in controlling oil consumption throughout the life of the engine.

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NASAO

(Continued from page 53)

es standards were set for maximum length for which CAA would expend Federal funds, that a lesser requirement would be permissible where conditions were justified. It was decided that a new feeder category—"would be added, runway 2200 100 ft, taxiway 50 ft and landing width 400 ft.

of Checking Non-Fed NavAids

Non-Federal Navigational Aids, as noted that agency policy had been uniform country-wide. Except, in Nebraska the state had to CAA for flight checking of state-aided aids used by both interstate and traffic while in Massachusetts, were checked without charge because they were used by local service users. The committee felt that since systems know no state boundaries the states' systems are integrated with the Federal, that CAA should eliminate the charges or that funds be provided by the Administrator for this purpose, was also proposed that establishment of runway lights on airports be so designed to accommodate ultimate width of runway rather than present fixed width of 10 ft from pavement

ence of Army Air Development

luncheon, the group was treated to a very interesting resume of the developments that will undoubtedly have considerable effect on the use of the helicopter, the STOL and TOL types. As so often in the history of civil aviation, federal support for military requirements is the spring of new improved design. Here the other services operate in high speed, specialized air weapon development with related benefits only to public carriers, the Army operates closely in the ground environment over altitudes similar to much of civil aviation.

It appears very probable that to-morrow's military and industry supported STOL research will produce in the foreseeable future a good STOL aircraft for personal and business use feeder operations," said Lt. Col.

in State Rules & Regulations

the following day, Alfred L. Wolf, prominent aviation legal expert, discussed the subject of "Uniform Rules and Regulations," noting chaotic conditions that existed in many states promulgated and registration requirements that tended to confuse and hamstring the country pilot.

He pointed out that one way to avoid over-regulation and multiplication of regulations is to enforce those simple, needed, necessary regulations already in existence.

Pennsylvania Aeronautics Commission sought and obtained an analysis of their regulations and revision to amend and form a model for the use of interested state officials.



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Restricted Airspace Case May Set Precedent

The first major Restricted Airspace decisions under the new setup wherein the CAA no longer speaks for civil aviation but as an official agency party only.

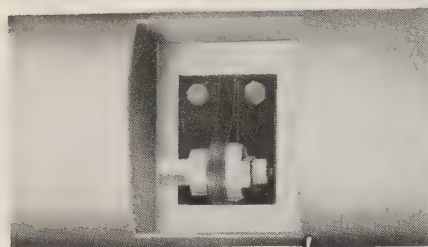
Two important areas and major civil airways transversing them are at stake. The first is in the Big Spring-Lubbock, Texas area affecting several main East-West routes, the second in the Parris Island, Beaufort, South Carolina area involving primary coastal airways.

In the former, restrictions would be effective from about 4,000 ft above surface and in the latter from the surface.

Both cases are before the Washington Airspace Division and action by the Administrator is expected shortly. A united group of civil aviation has already initiated protest against the Texas case, recommending that all such areas be limited to 12,000 msl and above, until such time as the Continental Control Area floor is established at 15,000 ft.

The National Business Aircraft Association is taking a leading part in the action to preserve the dwindling airspace for civil use (see Editorial this issue) and urgently needs NOW information from all business operators enumerating their past and estimated future use of airspace in these areas.

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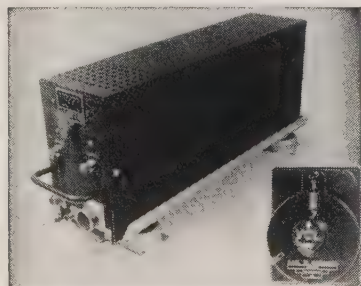
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IN THE BUSINESS HANGAR

■ **EXECUTIVE AIRCRAFT SERVICE, INC.**, Dallas, Texas, completed periodic inspection on Life & Casualty Insurance Co.'s Lodestar piloted by Bob Stone.

Sid W. Richardson's DC-3's were brought in by pilots Ed Armstrong and Jim Smith; one for periodic inspection and engine change, the other for 100-hr and misc. repairs.

Union Producing's Lodestar was in for engine change and misc. repairs. Their Convair 440 was in for engine change, annual inspection and overhaul. Chief Pilot is E. P. "Cotton" Jeter, Jr.

■ **FLIGHTCRAFT, INC.**, Portland Internat'l Airport, Ore., added Ken Foote to staff as manager of shops and maintenance. He has been service manager since July. Formerly with Wien Alaska Airlines as sup't of maintenance and a branch manager for Central Aircraft. He holds A&E, commercial land and sea, flight instructor and DMR. Has 9,000 hours flying time.

■ **SOUTHWEST AIRMOTIVE CO.**, Love Field, Fort Worth, Tex., announces purchase of Aircraft Sales Co. with facilities at Fort Worth and Longview, Tex. Main base at Fort Worth will be a Cessna dealer and authorized service station.

Southwest Airmotive announced also that James H. Craddock has joined the firm to assist with wholesale aircraft distribution.

Lockheed Aircraft's Lodestar had double engine change, short stack installation, 1,000-hr inspection and Janitrol heaters installed. Pilots are Les Hewitt and Mac Giles; Mechanic, W. D. (Doug) McClain.

■ **REMMERT-WERNER, INC.**, Lambert Field, St. Louis, Mo., completed a double engine change on Lion Oil's DC-3 piloted by Jerry Gammill.

Wolfe Industries' DC-3 was brought in for 100-hr inspection by pilot John Corrier. Plane also had relicensing.

Chemstrand Corp.'s D-18S was in for 1000-hr inspection and overhaul with wing removal, tanks pulled, gear magnafluxing, surface recovering, fire extinguishers, partial customizing with new interior, new headliner, new carpet, removal of rear bulkhead, modernized front bulkhead with folding cockpit door, weight and balance and . . . a new windshield wiper blade. Pilot is Ron Breckenridge.

Trostel Leather's Twin Beech was flown in by Rick Ravitts for some prop work.

Peabody Coal's DC-3 was in for installation of an aileron gap strip and 100-hr inspection. Pilots are Bob Boyanovsky and Bill Frame.

■ **SPARTAN AIRCRAFT CO'S AVIATION SERVICE DIV.**, Tulsa, Okla., was selected a regional distributor for Federal Tubeless Autopilot, manufactured by Industrial Products Div. of Internat'l Telephone and Telegraph Corp. Sales territory includes Okla-

homa, Arkansas, New Mexico and Texas Panhandle.

Spartan School of Aeronautics added a Copilot-Engineer course school's curriculum.

■ **BAY AVIATION SERVICES CO.** San Francisco Internat'l Airport, Calif., was awarded CAA Certificate for its radio shop, making it the first independent aircraft radio repair station on the airport with Class I and Class II ratings. Head of the radio shop is Lehman "Mac" Hauger.

■ **SOUTHERN AIRWAYS CO.**, Atlanta, Ga., has formed subsidiary Southern Airways of Florida, with headquarters at Orlando Municipal Airport. Service Manager will be George D. Gilreath of Atlanta.

Southern Airways is Beechcraft distributor. New company will facilitate sales and service, says Arthur Templeton, vice-pres and gen'l mgr of the new company.

■ **SAN JOSE AVIONICS CO.**, Municipal Airport, San Jose, Calif., completed radio system modification on Forward Bros. Properties & Co. Lumber & Box Co.'s Twin-Beech. Chief Pilot is Don Weise.

K-P-F Electric Co. had Dyna Engineering Corp.'s Autopilot Navigation Computer System Type AN-1 installed in E-18 Beechcraft. Also, GlideSlope Receiver in Cessna Skylark. Chief Pilot is Carl Hallmark.

Steiner Lumber Co.'s, Cessna 440 was brought in by George Steiner for complete radio system installation including ARC 15E Omni, ARC T-21 ADF & San Jose Avionics transistorized Isolation Amplifier.

Lloyd Hayes, of Sebastopol, annual servicing of his Daredevil equipment.

■ **PACIFIC AIRMOTIVE CO.**, Burbank, Calif., Aircraft Div., installed PAC-PacAero speed up modernization kit on LeSage Industries' Twin Beech. "Speed" John pilot, found gain of 20 mph at cruise.

Imperial Oil's Convair 240 is in Canada after radar nose installation, 3,000-hr inspection, repainting, refurbished interior and radio. Bruce Middleton, mgr, air transportation; chief engineer, Bob Quinn; pilot, Wes Pollack, brought the plane in from Toronto.

Bethlehem Steel's second Convair 440 is flying after installation of extended fuel and oil system, auxiliary power unit, additional ADI, automatic spark advance, true speed indicators, Sperry engine analyzer, Decelostat antiskid units, bottom interior and radio. Chief pilot, A. E. Junker.

General Petroleum Corp's DC-3 is in for a periodic inspection. McGregor is chief pilot.

Allegheny Ludlum Steel's Lodestar with Lloyd Santmyer and Bill Harrington in the cockpit, was in for a periodic inspection, tank strip, reseal and engine change.

etan's Lodestar, with Dick Rinaldi
ard, was in for a gear change.

ACAERO ENGINEERING CORP.,
ta Monica, Calif., delivered a Lear-
r Mark II to Potlatch Forests, Inc.
de Martin is chief pilot.

Wilshire Oil Co.'s Lodestar was
ught in for installation of radar and
cing system.

Industrial Indemnity's Lodestar
ne in for various modifications,
cluding rudder spring tabs, Learstar
eels and brakes, electrical and radio
ire, radar installation and interior
work. Bill Moore is chief pilot.

Waterman Steamship Corp.'s chief
ot, Bill Correll, flew in their Lear-
r for misc. service work.

**THE GARRETT CORP.'S AIRE-
ARCH AVIATION SERVICE DIV.**,
Angeles International Airport,
called a new executive interior in a
vair 240 for Frederick B. Ayer and
ociates Co. Also installed an
/FM radio entertainment system,
b-to-shore telephone, auxiliary
ver unit and auxiliary fuel tanks in
outer wing panels.

J. S. Steel Co., South American
ed DC-3, was in for de-icer boots
he wing and tail, 100-hr inspection
misc. work. Bill Collister accom-
ied the plane as company represen-
ve.

American Can Co., Convair 340,
n in by Chief Pilot Jim Hopkins
2,000-hr inspection, overhaul, ex-
or painting and misc. work.

Florida Investment Co., twin Beech-
t, had custom exterior painting

al Roach Studios, Convair 240,
ef Pilot Bill Winicpow, was in for
c. interior work.

AERO TRADES, INC., Ronkon-
a, N. Y. completed 100 hour in-
ction and misc. work on Fairchild
ine Division's Beech E18S. Chief
t is R. L. Rogers.

Commandair, Inc.'s Aero Com-
ander had new paint job to customer
ifications. Chief pilot is Al Chase.
American Cyanamid Co.'s Lockheed
rstar had Installation of Grimes
ating Beacon and misc. work. Chief
t is Wm. Shaughnessy.

ews Syndicate, Inc.'s DeHavilland
ver additional radio equipment in-
ted. Chief pilot is Wm. (Buster)
ener.

epublic Aviation Corp. had repaint-
of their Alouette Helicopter.

Joseph James Ryan's Grumman Mal-
received periodic inspection and
work. Chief pilot is Charles W.

**HORTON & HORTON CUSTOM
RKES, INC.**, Fort Worth, Tex., had
summer doing interiors ranging
n Cessna 140 of Tennessee Gas
mission to D-18 interiors for Carl
tlund and Vance Breese.

union Oil Co.'s Mallard was "Hor-
ezed" in tawny beige and turquoise
er direction of Dan Mitchell, chief

bsden Petroleum's deHavilland
n and Dove received matching
riors. Bill Edwards is Cosden's
tion Director.

Mrs. E. J. Benes chose Periwinkle
blue leather for her Aero Commander
interior.

■ **TIMMINS AVIATION LTD.**, Mon-
treal Canada, delivered Bell 47H ex-
ecutive helicopter to Aut-Air Ltd.'s
mgr, Doug Connor. Firm's Alouette
was in for routine servicing.

Dept. of Colonization, Province of
Quebec, took delivery of new Super
18E. Pilots are Paul Cayer and Pierre
Lalibertie. Plane had custom radio in-
stallation by TIM-COM Eng'rg Ltd.,
instrumentation, including ARC pack-
age, plus other equipment.

New York Dept. of Conservation's
Otter was in for engine work. Pilot
is Henry Evans.

Mussens (Canada) Ltd.'s Beechcraft
was reinstated. Pilot is Frank Palin.

Bovay Consulting Engineers' Twin
Navion had an engine change. Jim
Fletcher is pilot of the Texas firm.

Hollinger Consolidated Gold Mines'
DC-3 was flown in by Don McClintock
and Bud McNally for Maximizer in-
stallation.

Royal Bank of Canada is first Cana-
dian bank to operate a business plane,
a DC-3. Crew members are Jack Clark,
Gene Gauzer and Dave Griffin. Plane is
Timmins-based.

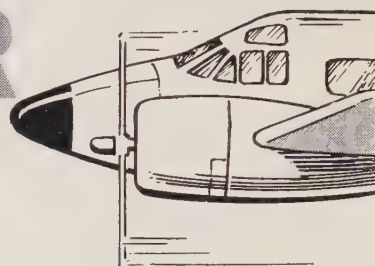
■ **GUNNELL AVIATION INC.**, Santa
Monica, Calif., is recently activated
business-private aviation facility.
Offers Cessna sales and service.

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now you can lease

WEATHER
RADAR

for your airplane



Here's important news for business aircraft owners. Now available at Cair . . . a special Radar Lease Plan to cover cost of your complete new weather radar system, including installation. You can enjoy the advantages of radar now with no capital expenditure . . . handle lease payments as tax-deductible operating expense. This plan can be applied to all types of radar in all types of aircraft. The lease can be written to suit your specific requirements.

Cair's recently developed "Packaged Radar" techniques have substantially reduced radar installation cost and in-process time. Combined with this new Radar Lease Plan, it's simply "good business" to arrange for weather radar in your aircraft now.

Write, wire or call for details today



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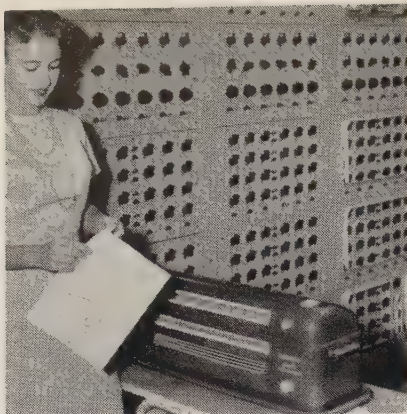
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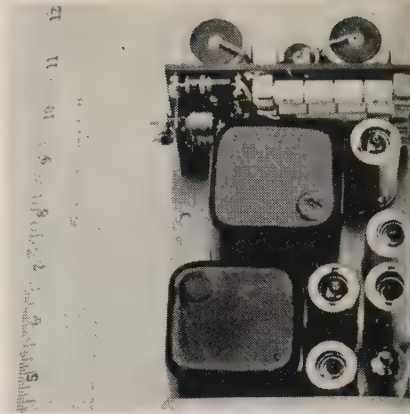
Circle No. 41 on Reader Service Card



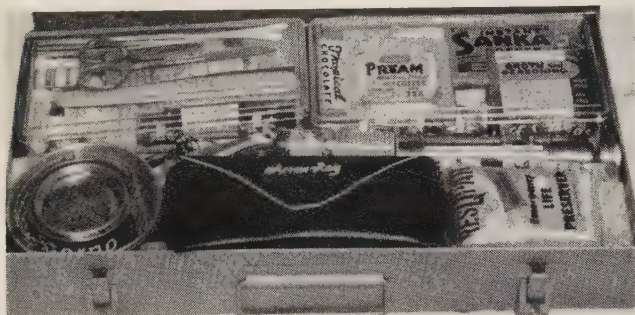
Cylinder Compression Tester



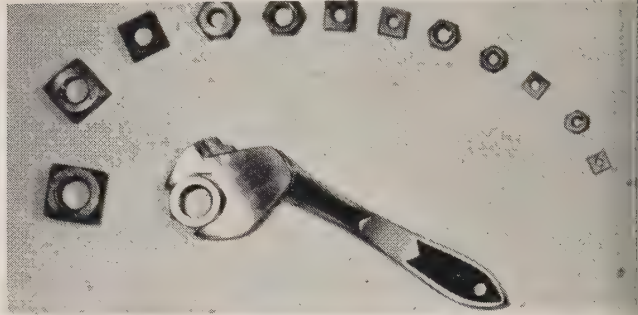
Photocopy Machine



Power Supply Unit



Aviation Safety Kit



Instant Grip Wrench

nu-avi-quip

Cylinder Compression Tester Kit

A kit of six cylinder compression testers gives simultaneous comparative readings with one tester installed in each cylinder.

The Accro-Matic Cylinder Compression Testers are offered as an accurate and fast convenience to shops servicing light engine aircraft. With each tester registering and retaining the maximum pressure in each cylinder simultaneously, variables such as cranking speed, engine temperature, oil film and other factors which occur when checking cylinders individually are eliminated.

Circle No. 42 on Reader Service Card

Photocopy Machine Offers Airborne Executives Time-Saving Device

The Copease "Duplex" photocopy machine can be used to duplicate company reports en route from field trips making reports available for immediate distribution on arrival at a plant or office.

A unique feature of the machine is its ability to make two positives from the same negative. The machine can make legally acceptable, fade-proof copies of all office papers including stapled papers, in any ink, type, crayon or pencil.

Circle No. 43 on Reader Service Card

Light, Compact Power Supply Unit

A new model power supply unit is

lightweight, 9 lbs. and compact in size, 10½" x 3½" x 4⅞".

The power supply offers input specifications capability while maintaining its output characteristics, according to the manufacturer. Input specifications are 115 volts plus/minus 10% and 60 to 400 cycles. Any cycle rating between and including 60 and 400 cycles will produce a DC output of 18 watts regulated within 0.5% at plus-220V and minus-220V. Ripple is 0.005% with 60 cycles input. There is 6.3 volts AC at 5 amps available.

Circle No. 44 on Reader Service Card

Combination Aviation Safety Kit

"It is surprising how little mention is made in safety columns on advisability of having something in aircraft to assist search and rescue efforts and to help keep the occupants alive once they are down in some remote area," states a representative of the firm manufacturing the Aero-Doc aviation safety package.

The package contains a first aid kit, signal equipment, two life preservers, subsistence items and miscellaneous articles as a combination knife, fishing kit, compass, fire starters for wet weather and water purification tablets.

Circle No. 45 on Reader Service Card

Automatic Wrench Has Instant Grip

A "flick of the wrist" tightens or loosens the "Flikit" instant grip auto-

matic wrench. No finger tip or manual adjustment is necessary, the manufacturer claims. The wrench is placed on the nut; turning action automatically closes the jaws to the size of the nut. The wrench comes in three sizes and handles all types of nuts. It is suitable to all types of maintenance work.

Circle No. 46 on Reader Service Card

Aircraft Oil Cooler Cleaner

A new type oil cooler cleaner, claimed to be less expensive to operate and faster than other methods, is announced by the manufacturer.

The cooler operates on tracks over stainless steel cabinet; hoses are attached to run solvent through the cooler. The cooler cleaning material runs through the cooler and is then flushed out with trichlorethylene.

Cleaning time per oil cooler is minutes as opposed to the two to hours required by other systems, according to the manufacturer.

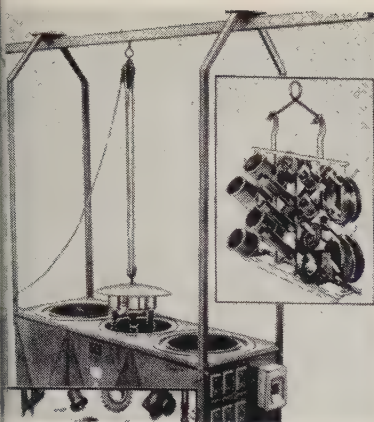
Circle No. 47 on Reader Service Card

Cold Parts Cleaner Fast Acting

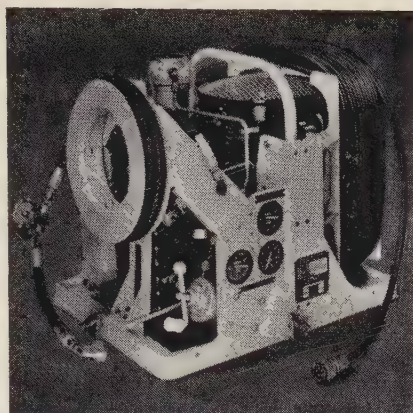
Development of a fast-acting cold parts cleaner speeds up work of mechanics in aviation and other fields.

The cleaner dissolves and washes away foreign coatings from metal surfaces. It is of the immersion type, composed of concentrated blend of solvents under a water seal. It is designed to break down baked on carbon, etc.

Circle No. 48 on Reader Service Card



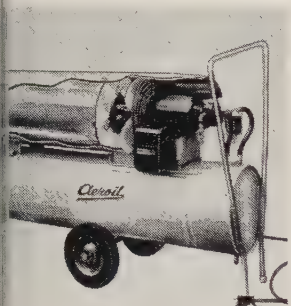
Processing Unit



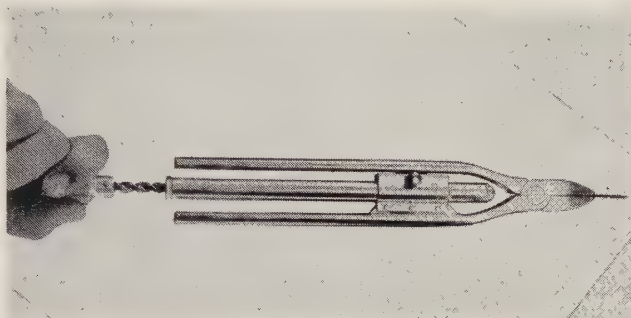
Air Compressor



Vacuum Cleaner



Space Heaters



Wire Twister



Safety Spheres

Treats Metal Friction Parts With Protective Absorbent Coating

Overhaul work on metal friction parts aided with a new processing unit for treating the parts with protective oil absorbent coating. Such parts would be pistons, piston rings, etc.

The processing unit simplifies the operation and lowers the cost of treatment, according to the manufacturer. It consists of three tanks, 16" diameter 18" deep, fully fiberglass insulated, housed in a single cabinet, equipped with an automatically controlled electrical timing apparatus. A rail hoist 5' over-drum permits easy handling of parts. The timing tank is of stainless steel. The unit is equipped with automatic controls to insure precision temperature for long operation.

Circle No. 49 on Reader Service Card

Compressor for Ground Service

Ground service of aircraft can be aided by a portable air compressor. Two models have been announced. They will handle needs for all business and commercial type aircraft (except for fuel air starter systems as used on the largest aircraft).

Model 130R3500 is an electric motor driven unit, operating on a 200 volt, 3 cycle, 3 phase current. It comes in a fiberglass transit case equipped with large handles for tie-down webbing when carried on an aircraft. It delivers 3 cfm air from 50 to 3000 psi.

Model 130R1409 is operated by a 2½ hp single cylinder 4 cycle gasoline engine. It weighs 130 lbs and will deliver

2 to 4 cfm of air from 50 to 3000 psi.

Both models have a manually adjustable pressure regulator. Delivered air is moisture free, due to a moisture separator and a chemical drier built into the system.

Circle No. 50 on Reader Service Card

Air Powered Vacuum Cleaner

An industrial type vacuum cleaner operates from compressed air source. Handy for ramp or hangar use, the compact, light weight unit creates a powerful suction without electric motors, switches or wiring. This permits completely safe operation in wet, dusty or explosive atmospheric conditions.

The vacuum is mounted on castor wheels for easy handling and maneuvering.

Circle No. 51 on Reader Service Card

New Blower Space Heaters

Many fixed base operators face the problem of quick, portable dry heat in hangar areas not normally requiring it, as for extra paint spray quarters, etc. A new line of blower type space heaters with BTU outputs up to 500,000 units, plug in to ordinary AC current and will produce a high volume of air delivery, at an operating cost of only a few cents an hour.

Circle No. 52 on Reader Service Card

One-Hand Operated Wire Twister

A wire twister that also grips and cuts safety wires has been designed for multiple aircraft assembly jobs.

The tool gives a uniform twist each time and needs only a continuous one-hand operation. A completely automatic spring return eliminates need to shift hands. It has a pushbutton lock with automatic squeeze release for fast operation. Special ball-bearing drive assures smooth, long-lasting performance, the manufacturer claims.

Circle No. 53 on Reader Service Card

Safety Spheres Mark Aerial "Booby-Traps"

Even in good visibility, utility lines and TV/radio tower supporting guy wires are still taking a toll around airports. One of the best ways to conquer this hazard is the growing practice of public agencies and private companies marking these almost invisible wires with "Air Safety Spheres," made of spun aluminum, 20" diameter, weight 4 lbs and painted either bright international orange or fluorescent orange.

Circle No. 54 on Reader Service Card

Atomic-Lighted Exit Markers

Atomic-lighted exit and emergency markers require no electrical connections or other external power source. A glass tube is internally coated with a special phosphor filled with tritium gas. The phosphor coating, excited by the tritium gas, emits light.

Research using standard aircraft lettering indicated most satisfactory marker is readily visible from 100 ft or more, legible to light-adapted eye at 25-35 ft; a dark-adapted eye, 30-40 ft.

Circle No. 55 on Reader Service Card

Round Table

(Continued from page 54)

and more work is being done in that direction. There is no substitute in any phase of medicine to my knowledge, for a good training experience and clinical examination. There is no substitute for good comprehensive history. There are a few psychological tests that have been devised both by psychiatrists and psychologists jointly. Some of them could be considered. They are some of a newer type test using Projective Techniques which can be applied. Some of the tests are devised to bring out hidden tendencies by asking confusing questions which the person cannot

quickly decipher. You can get at a truthful answer because he doesn't know how to dodge.

These tests can bring out tendencies and characteristics. But in the final analysis, you'd have to have a trained psychiatrist to determine definite abnormalities and disabling qualities.

Dr. Justis: I see, but anything would help considering the laxity of the Third Class Certificate. Perhaps, if certification were not granted by the signing physician, but by the Regional Director, a more impersonal attitude would be present. The Director could grant or deny the certificate on the basis of all the facts presented by the applicant

and his physician. The family doctor would thus not feel responsible for say, a personal friend's failure to obtain a license.

F. H. Coble, M.D.: In the absence of simplified tests for examination of student pilot, might it not be of value to obtain statements from a teacher, minister and a third, unrelated acquaintance, asking that person's opinion of the mental stability of the applicant?

Dr. Gentry: That's a good point. The biggest problem facing the CAA right now in the certification of pilots is the examiner who is not a "designated" examiner. The law allows any licensed physician to do the examination. The doctor who is not designated is in the dark since he has no standards to go by. If he just had a book of instructions, he might be perfectly capable of doing a good job. Can you give me the names of doctors in your communities who are interested enough in aviation to be an examiner, someone you know who is basically qualified?

J. R. Durham, M.D.: Concerning the examination of pilots for a Third Class medical by non-designated medical examiners; as a member of the Flight Safety Foundation panel on two occasions, November, 1957, and March of this year, I would like to say that the Foundation recommended that only designated examiners perform all classes of examinations.

Dr. Chandler: I do many Class II physicals, most on pilots around my own field. I know these men and feel that I can do a much better job on them than general practitioners who may or may not care about aviation. I saw a boy who was a star on a local football team turned down on his physical as having a bad heart. I sent him to a cardiologist who could find nothing wrong with his heart. I was also told by a cardiologist that if a man can walk up the ramp of an airliner plane, that he could fly it! From these two extremes, it certainly seems that there should be some educational program for examiners.

A. M. Munchak, M.D., (CAA examiner): I examined a pilot who had vision in only one eye. He was an excellent pilot, but I recommended that he be rejected because of his monocular vision. He was flight tested and given a waiver on a second class certificate. He had several accidents subsequent to this and was grounded.

I think binocular vision is most important. In a case where you have a pilot who is very well trained or very experienced, some leeway ought to be given him; maybe to license him commercially only as a co-pilot. Some arrangement might be made so that he could safely continue his sole occupation of flying. Again, I am speaking only for experienced and highly trained commercial pilots.

(Ed. note: It would appear that other than professionally-rated pilots would not require this consideration inasmuch as the loss of their certification might not prevent their flying with

(Continued on page 6)



RADAR NOW AVAILABLE FOR C-46 AIRCRAFT

The L. B. Smith Super 46C is the first aircraft in the C46 Series to be equipped with weather radar.

In designing the Super 46C conversion, L. B. Smith has increased all performance characteristics of this time-proven aircraft . . .

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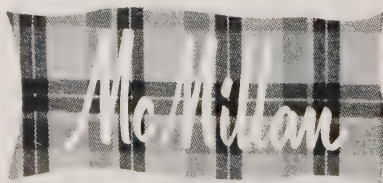
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Impressive rate of climb and improved single engine performance.

To complete this safety package, McMillan, in cooperation with L. B. Smith, has designed and developed a complete radome kit adaptable and certificated for installation on any C46 type aircraft. This kit pro-

vides for the mounting of either a C- or X-band radome and a hinged antenna bulkhead. Kit 770C/X is easily installed with no major fuselage modification.

For additional information on C-46, or other radome kits, contact L. B. Smith, your nearest McMillan distributor, or write us directly.



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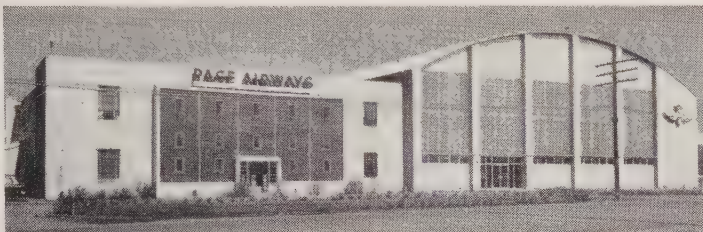
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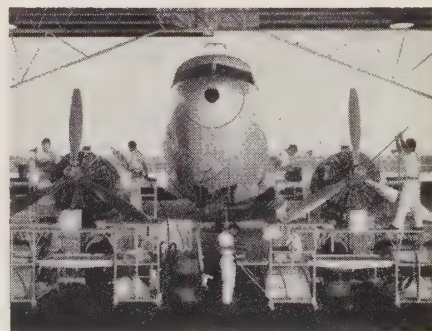
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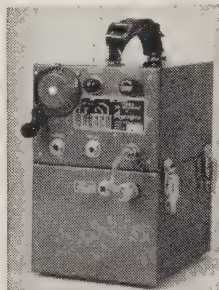
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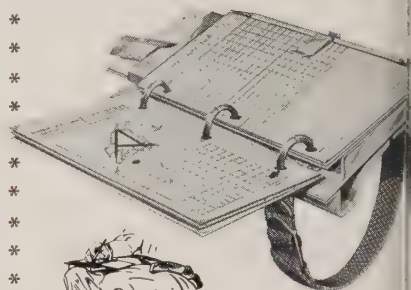
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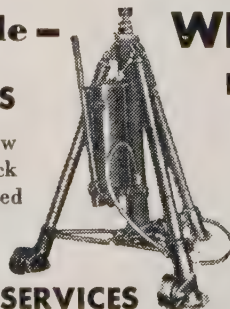
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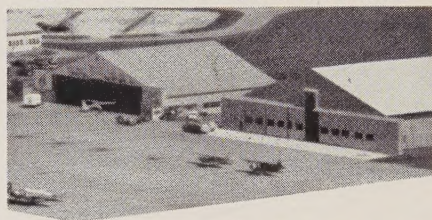
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Round Table

(Continued from page 62)

a rated and qualified co-pilot. We invite our readers to submit their opinions such as the effect on solo-flying personal business pilots?)

The same should be true for other defects, such as healed cases of peptic ulcers and certain orthopedic defects. I have a pilot now who, while acting as co-pilot, suffered temporary sudden blindness. It was diagnosed as a cerebral aneurism. This was never proved by angiograms, and he has not had an attack since then. Another fellow injured his back and had a spinal fusion operation. I don't believe these pilots should be given a regular First or Second Class certificate. Separate provisions should be made whereby these commercial pilots can continue working as co-pilots—or in some other capacity so that their training, experience and earning capacity is not a total loss to aviation.

Dr. Gentry: Most of the airlines and industries employing pilots have positions for such persons, such as Link Trainer instructors, flight dispatchers, salesmen, etc. I know of a doctor who was ambidextrous. He had polio and lost the use of his hands, can't even sign his name today. That's just the way of life. A pilot is subject to these tragic things just as anyone else is, but we can't jeopardize the lives of the public for an individual.

There are times as you well know, if you've been in the middle of a thunderstorm, where both pilots in an airplane have both hands busy and wish they were an octopus with six hands. You can't have a lame duck or crippled individual there. Too many lives involved.

Dr. Vickers: Does the Survey say anything about ruptured peptic ulcers?

Dr. Sullenberger: There's a general consensus in the Flight Safety research that is agreed to by the ALPA that either a pilot flies, or he doesn't fly. There can be no limited status based on a health factor.

Dr. Durham: On the subject of the advisability of limited medical certificates for pilots who may have had a heart attack, the consensus of the survey was that a pilot who has had a definite heart attack would not be permitted any type of license nor be permitted to serve in a limited capacity such as co-pilot, check pilot, etc.

Lee Gillette, M.D., (Nat'l. Director, FPA): I think that all these specific medical problems can be decided upon quite well by the individual examiner and consultants in the field. It is important in flight safety that you look for a stable, competent, mature individual.

That is the really essential quality you need in a pilot. The physical things are somewhat secondary within limits. My interest has been in private flying since the war. During the war, I was a flight surgeon and was very interested in which pilots would be the safest pilots and, also, which would be the best in combat. I don't think that differs much from private flying. In a critical situation you have to have a man who responds well to stress. I think the panel agrees that this is the type of man we are trying to pick out.

During the war this was driven home by a little incident. I was standing at the end of the runway watching a Lockheed Hudson take off. It skittered down the runway a little way, then it ground-looped and burned. Fortunately, all the occupants jumped out. That evening we were having a critique, and the commanding officer, an old World War I pilot, dismissed the whole affair with the simple statement that it was "cockpit trouble." I think that may sum up many of our problems in aviation. To avoid cockpit trouble, I think you have to pick the same type of individual we mentioned before—this stable, competent fellow who doesn't make all these little mistakes, doesn't get into accidents and can be relied upon in emergencies.

Dr. Gentry: We have a good precedent in the older forms of transportation, railroads, buses, steamships. They have quite rigid requirements for an engineer on a railroad, particularly diesels. The same in industry. You don't let a man use a dangerous piece of apparatus unless he's proved he can do it without endangering himself or others.

Anyone else we haven't heard from?

Dr. Munchak: I'd just like to add, Dr. Gentry, that as in all of medicine, medical examinations can't be entirely scientific and still be an art. The examiner who knows the principles of what is required of an individual involved in flying and examines him and gets to know him . . . maybe meets and observes him at the airport or flies with him and consults with the airport operator and with other pilots for information . . . he is still the best man to determine whether or not that man should be in the air.

Dr. Gentry: That's right. I couldn't agree with you more.

Gentlemen, I think the subject here today is one that we could continue for hours more. The relationship of our efforts to insure the safety and health of all civil pilots to the various classes of physical examinations is under much scrutiny today. Therefore our topic is most timely and cogent. We, in CAA, consider ourselves fortunate in the cooperation and help we get from the medical profession in charting the best possible course in the interests of the public welfare. The FSF medical standards study is a fine contribution.

I think we also should acknowledge the leadership of SKYWAYS magazine in arranging this Round Table Forum in cooperation with the Flying Physicians Association, the Montauk Manor and the Sea-Sky Portel people.

CAB

(Continued from page 50)

an important new technique of analysis, we have some significant information on the cause.

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Suite 344

(Continued from page 13)

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Governor George M. Leader, designated the week of September 21 to 29, 1958, as Aviation Week for Pennsylvania as a welcome to NBAA and NASAO. Thank you, Governor.

Navicom

(Continued from page 41)

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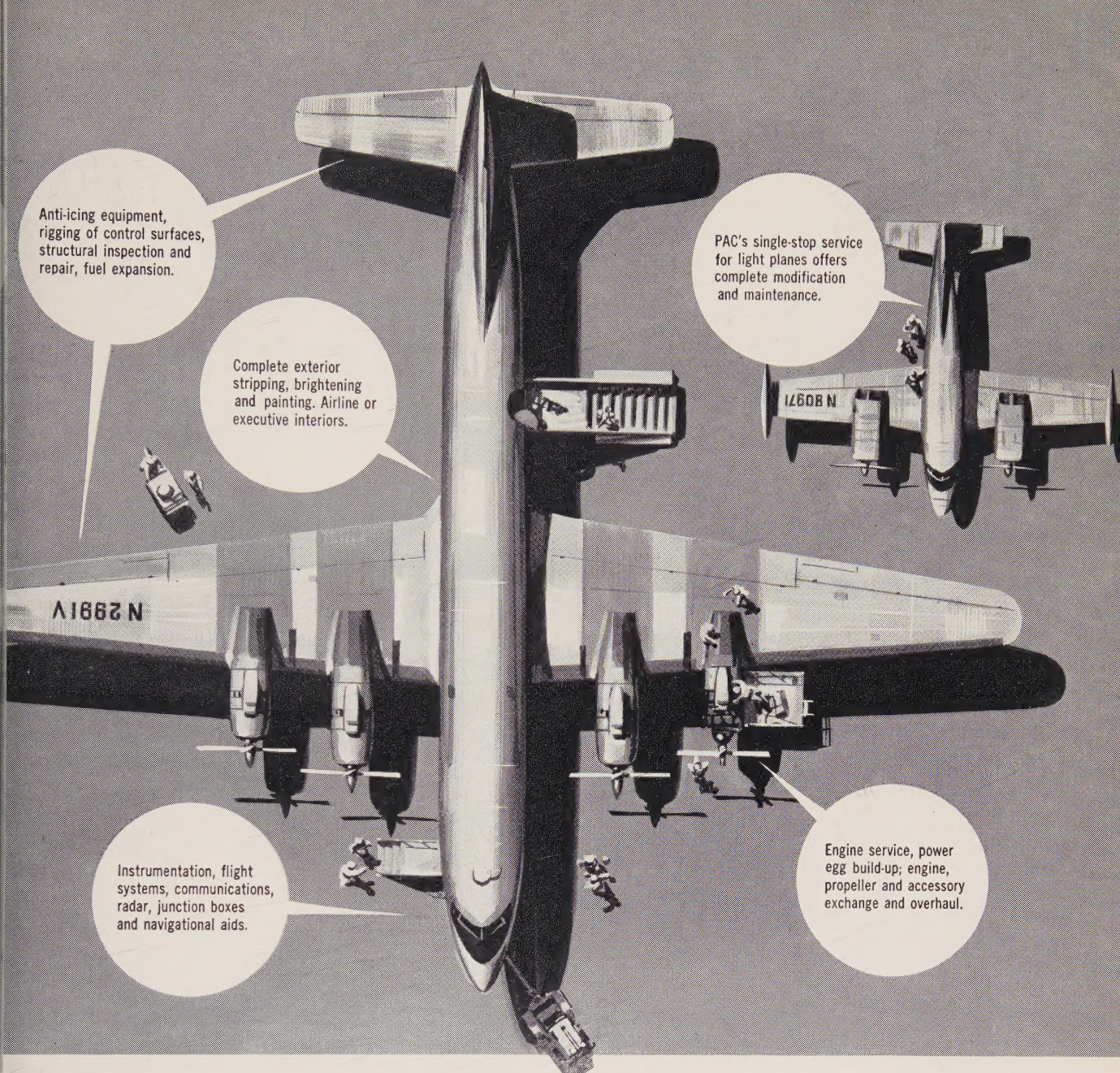
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